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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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SEPTEMBER, 1940

Vol. 93, No. 9

The Fire Service, too, Needs Armament for its Perpetual Fight

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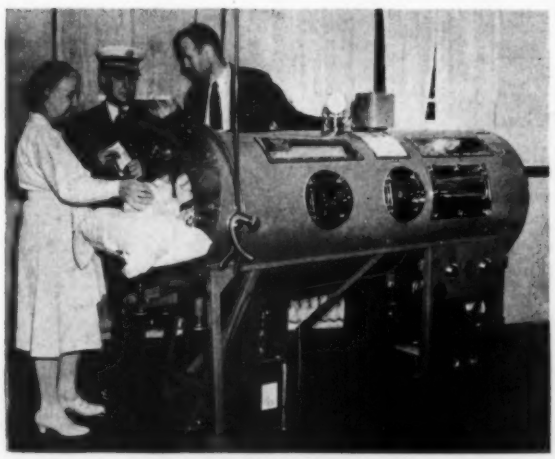

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CAMBRIDGE MASSACHUSETTS

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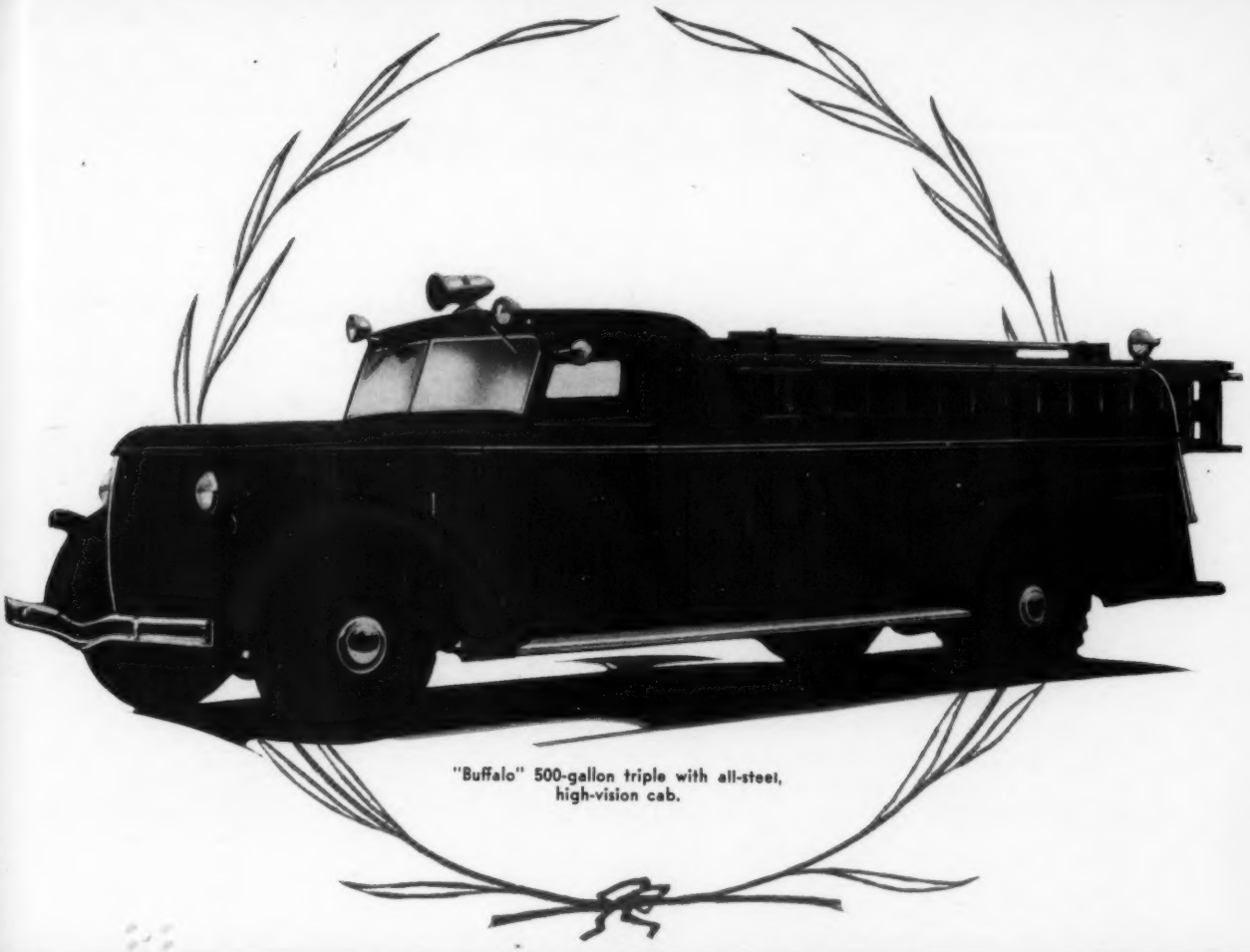

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The Journal of the Fire Protection Profession Since 1877

FRED SHEPPERD
Editor
N. N. WOLPERT, Assistant Editor.

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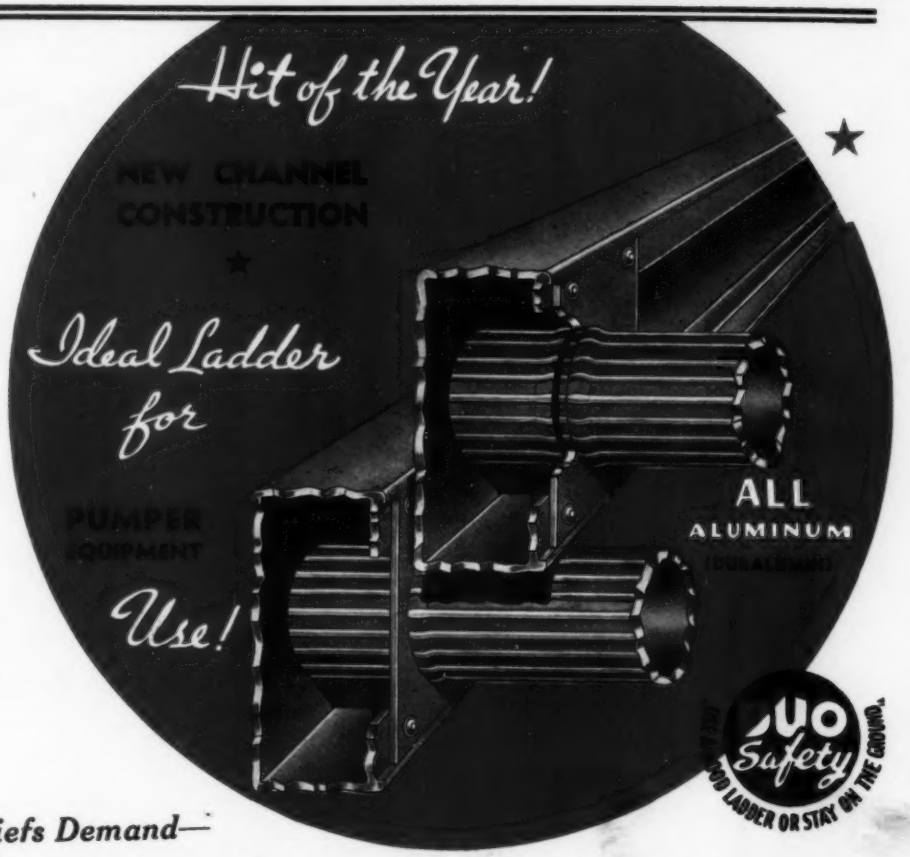

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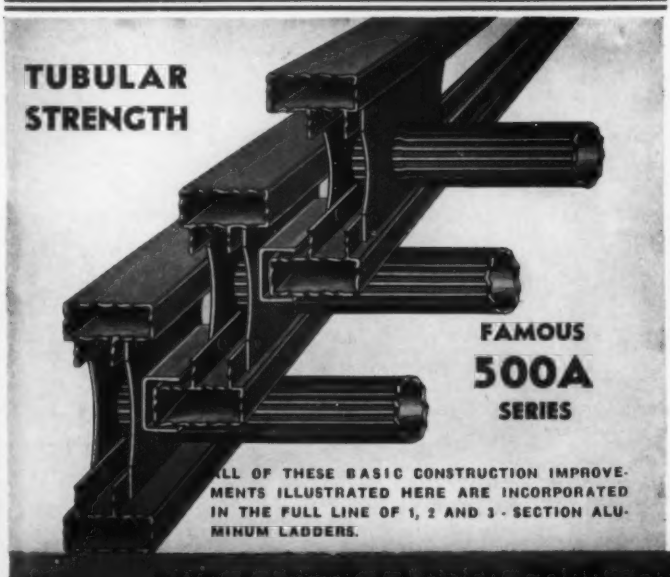
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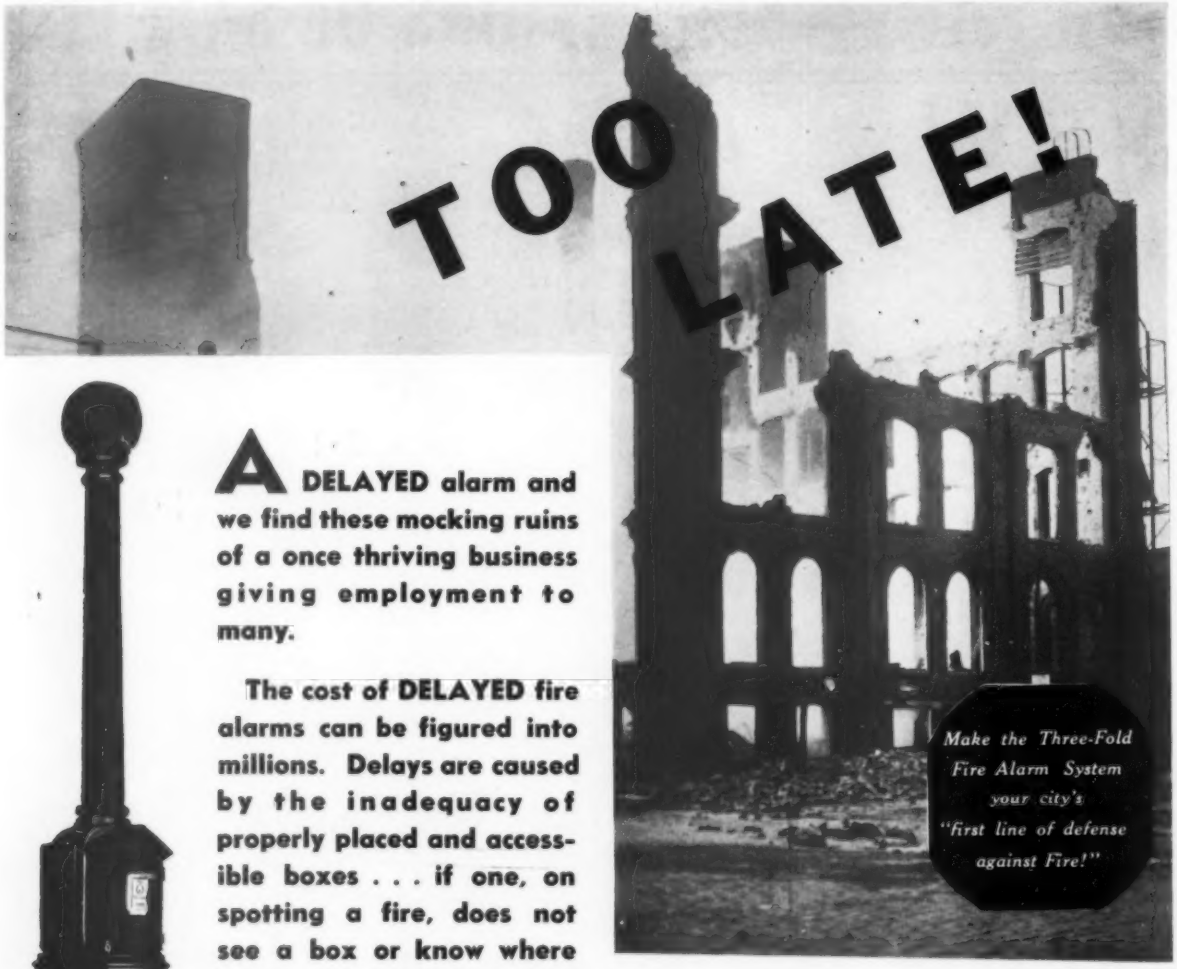

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FIRE
ENGINEERING

SEPTEMBER, 1940 VOL. 93. NO. 9

With the Editor

The Volunteer Ambulance Serves The Fire Department Ambulance Corps has established a unique place for itself in the Volunteer Fire Service. One hundred fifty runs per year, over the area of a County, is not an unusual performance for an ambulance maintained by a volunteer department. With the great number of highway accidents today, the service rendered by these units is invaluable.

So rapidly has the ambulance movement spread among Volunteer organizations that, at the present time, county organizations or even state organizations, are being talked of as a means of securing more effective operation and avoiding duplication of service.

The Rockland County Emergency and First Aid Council of Nyack, New York, is at this moment endeavoring to form either a statewide, or a nationwide organization of First Aid and Emergency Squads.

With the threat of war upon our shores facing us, the need for a strong organization among these units is paramount.

Incidentally, behind this forward move is Captain William Paul Babcock, Secretary of the Rockland County Emergency Council, who has been a leader in a number of other movements designed to advance the Volunteer Fire Service. It was the same Captain Babcock who first formed a volunteer salvage corp in this country and which served as a model for many other communities from Coast to Coast.

Incidentally, Captain Babcock, whose address is Nyack, New York, would like to contact other Departments maintaining ambulance corps, and emergency mobile units. This is a movement which deserves the cooperation of volunteers, as well as paid departments, throughout the country.

Fire Traps Fire traps are like taxes —they are always with us. Even though we accomplish 100 per cent removal today, tomorrow will bring forth a new crop. Time and usage, plus obsolescence, make future fire traps out of today's good buildings.

Thus the problem of controlling the fire trap is a perpetual one. It is not the occasional intensified effort that solves the problem, but rather a long range, continual program.

Such a program must take into account not only structures which become unsafe from obsolescence and neglect, but sound buildings which may be made unsafe for occupants by the erection of adjoining structures which may obstruct former adequate exits. A typical example of the latter is a theatre in an eastern city, which had its side exits blocked by buildings erected on either side.

Ignorance and illegal alterations also can be blamed for many normally safe building hazards. Take for example the recent fatal fire in Natchez, Miss. Here all openings in a dance hall, except the front door, were barred to keep out "gate crashers." This single exit was not capable of discharging, in a few minutes, the 300 dancers when a fast travelling fire started. Loss of 199 lives resulted.

Eternal vigilance as well as a foolproof building code, intelligently and vigorously enforced, are vital in making structures fire safe.

Fred Sheppard

Carelessness With Gasoline

By WILLIAM H. GARDNER
Chief, Kansas City Fire Patrol*

CARELESSNESS means lacking care or interest; indifferent; irresponsible; or light-hearted. Carefulness signifies a watchful attention and regard, with a view to safety or protection of yourself and others.

Chief W. H. Gardner

This familiar stuff called gasoline is worthy of a great deal of respect that it doesn't get from the average person. Most people see and handle it so frequently that they think nothing of it. The fellow who would have a heart attack in the presence of a large amount of dynamite, or call for help from his Maker at the sight of a lighted pipe or match on a keg of blasting powder, is humorously careless of his handling of a liquid that is vastly more dangerous than either of these. Experts have fixed the explosive power of gasoline at eighty-three times that of dynamite. It seems to me that if more people realized this they would not be so reckless in their contracts with it, and we would have much less trouble than we do.

As near as I can find out, we are losing approximately 2,500 lives a year in the United States from the mishandling of inflammable liquids. It is not difficult to see why it is such a hazardous commodity. First, it has a very low flash point, the temperature at which it gives off an explosive vapor.

Gasoline's flash point ranges down to zero, or lower. Secondly, it is a highly volatile liquid, one pint being sufficient to produce 1,000 cubic feet of vapor. The sum and substance of all this is that a small quantity of gasoline can produce a large quantity of vapor which will be highly explosive when mixed with the right proportion of air and which needs only the presence of a slight spark to touch it off. This is the first fact the average person overlooks, yet it is important, because when the conditions are right, that vapor will not fail to explode.

All Grades Are Flammable

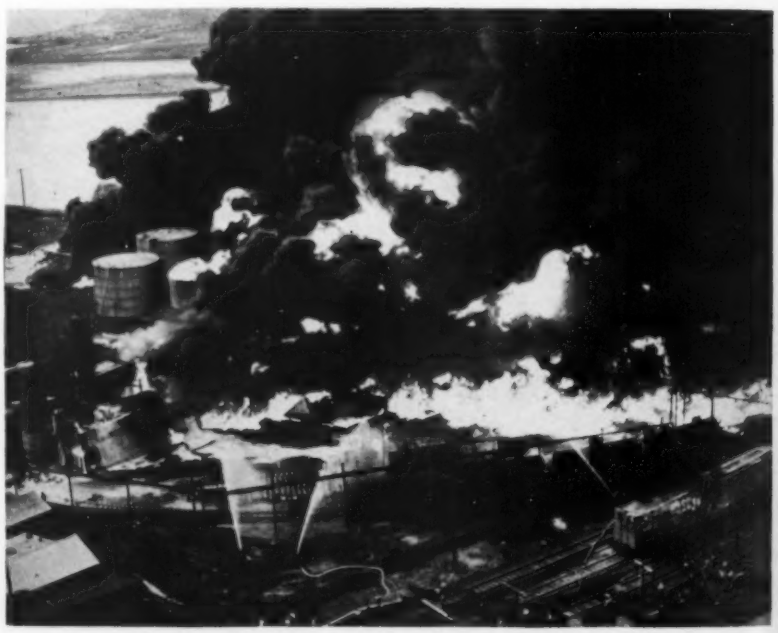
According to the Farmer's Bulletin No. 1678, issued by the U. S. Department of Agriculture, the government authorities say all grades of gasoline are flammable and dangerous. They should always be treated as such.

Gasoline has been called "liquid dynamite" because of the explosive violence which results from the ignition of gasoline vapor mixed with air in certain proportions. The various grades of gasoline differ somewhat in chemical and physical properties. The better grades are much more hazardous to handle than others. As they are much more volatile, they mix with air in larger proportions and pass into vapor form more rapidly. Gasoline vapor is heavier than air; consequently it will float along near the ground, like an invisible stream, for distances. In a lean mixture (a little less than two per cent) five gallons of gasoline would produce 8,000 cubic feet of burnable or mildly explosive gas, or enough to fill a room having the dimensions twenty by forty feet by ten feet. If ignited, and if no heat is lost, and the products of combustion are at atmospheric pressure, this mixture would expand to six or seven times the initial volume of air and gas vapor, with destructive results.

Proper Mixture Must Exist

As with other gases and vapors, before an explosion of gasoline vapor can occur a definite proportion of air and gasoline vapor must be present. In 100 parts by volume of air and

*Abstract of paper presented before annual conference of the Missouri Valley Association of Fire Chiefs.



Thirteen Tanks Exploded at this Oil Refinery Fire
A fire fed by oil, gasoline and naptha created a serious hazard for this New Jersey community. Aid was rushed from nearby towns, and a fireboat was sent by New York City.

gasoline, an explosion will not take place if there is less than one or more than six parts of gasoline vapor. In other words, the explosive range is between one and about six per cent of gasoline vapor. This range of explosibility is narrow, as compared with that of many other mixtures of combustible gases and air; nevertheless, in the lower limit there is a very small proportion of gasoline vapor, indicating the great importance of not allowing even a little gasoline to be exposed in a room or confined space. Kerosene, unlike gasoline, is not highly flammable. When heated, however, it gives off dangerous vapors which are capable of forming explosive mixtures with air. Generally, kerosenes have flash points above 100 degrees Fahrenheit, whereas the flash points of gasoline range down to zero and lower. So much for the valuable information from the government bulletin.

Gasoline Truck Destroyed

It has been well said that the spark from a cat's back is sufficient to explode this stuff called liquid dynamite, but if you want to go even further than that into the "Believe it or not" field, consider the case of the new driver for a gasoline distributor whose truck burned up one day. Investigation showed that he had not been in any way responsible for the fire, so he was given a new truck. In time that one burned up, too, and after a most rigorous investigation again failed to produce any evidence of negligence on his part; he was put on a third truck. When that one eventually went up in smoke, the officials held a council of war. They couldn't pin a thing on him—he had reliable and impartial eye-witnesses to prove that he was absolutely beyond reproach on each occasion, so, as a last resource, the medical men were called in—and they solved the mystery. They found that the man's physical make-up was such that his body generated considerably more static electricity than normal. Hence when the atmosphere was dry and the necessary amount of friction provided, he just couldn't help but set fire to his trucks when he opened the valves that started the stuff running. Needless to say, they transferred him to a job where his "magnetism" wouldn't prove so dangerous. My authority for this incident is none other than Thomas F. Dougherty, former Assistant Chief, New York Fire Department.

When Gasoline Went Out of Bounds in a Pennsylvania City

Six Persons Were Killed by this Gasoline Tank Blast, and Thirty Others Were Injured

But what about the man who becomes careless smoking a pipe, cigar or cigarette in the basement garage; the careless employee smoking in the public garage, filling station, or industrial plant where gasoline vapors can be found? I think most filling station attendants will tell us that the metal nozzle of the supply hose should rest against the metal rim of the car's gas tank during the process of filling the tank. This aids in grounding any static that may be generated, diverting it through the metal parts instead of permitting it to spark in mid-air where it may hit the gasoline vapor. Drivers of tank wagons are always watchful to make sure that the drag chain is properly attached to the truck. That chain is just about as important as an asbestos curtain in a theatre. The chain dangling behind the tank truck to the pavement will ground any static that may be generated in the vehicle.

High Voltage in Supply Hose

I have been informed that scientific tests have shown as much as 400 to 500 volts of electricity can be generated in a gasoline supply hose by the friction of the flowing fluid.

Pouring gasoline from one can to another without contacting the cans may cause an explosion. Many may remember back to the days when gasoline was strained through chamois

in the fire stations. That practice was discarded shortly after it was inaugurated because of the number of explosions and fires that this generally caused.

Static electricity is easily generated and some may wonder why we don't have more explosions. I believe the answer is that those who handle gasoline professionally and commercially, are constantly striving to be careful with it. Every precaution should be taken by the layman to be exceptionally careful when using gasoline, and by all means it should never be left in an open container, or in any vessel not securely capped.

Examinations for Gas Leaks

It is well worth our time to look for leaks in tanks, cans, gas lines of automobiles, motor boats, or motorcycles. Crank case draining, rags or other refuse saturated with gasoline should not left around indoors. The private domestic garage should be well ventilated. Windows and especially doors should be left open as much as possible, particularly if the garage happens to be in the basement. The gasoline vapor will always seek the lowest level, and if it finds a location below grade, ordinary ventilation methods will not remove it for a long time. Gasoline cans should be kept away from heat pipes, furnaces and radiators. Cans of gasoline exposed to the sun outdoors is just another way to let yourself in for a lot of trouble, for when gasoline is heated under confinement it expands so forcefully that it may rupture containers.

As an aftermath of two serious gasoline tank truck fires, the Board of City Commissioners of Ottawa, Kan., passed, on July 29, 1936, an ordinance prohibiting the transportation, by tank trucks, of petroleum products in quantities over 600 gallons through or into the city of Ottawa. The validity of the ordinance was contested by transportation companies, but the Kansas Supreme Court later upheld the city ordinance.

Kansas Court Decision

We all know that from year to year our state laws are changed, and frequently new laws are enacted. Such changes quite often have a direct bearing on the local fire ordinances of communities. Recently the Kansas Supreme Court reversed its decision which upheld the ordinance of the city of Ottawa, which prohibited the transportation of gasoline through the city streets in trucks containing more than 600 gallons. The reverse decision was based on the new Chapter 283 of the state laws creating uniform traffic regulations. This chapter restricts the power of cities to regulate traffic within their corporate limits Justice Smith, in delivering the opinion of the court, showed that the new Chapter of the state law expressly repeals a statute giving the cities power to regulate and control the use and speed of automobiles and motor vehicles within their corporate limits.

So the Fire Chiefs now seem to have another duty. They must be on the alert for changes in laws affecting the city fire ordinances. If a Chief fails to keep himself informed on all new laws pertaining to the public safety, then he fails to properly protect his community. He can always appeal to the public for assistance.

To the Members and Delegates of the International Association of Fire Chiefs

Through the medium of FIRE ENGINEERING, I wish to take this opportunity to thank all the delegates and members of the International Association of Fire Chiefs for their kind help and cooperation so ostentiously displayed the fore part of August at the 68th Annual Conference held in the City of Spokane.

The personnel of the Spokane Fire Department along with the citizens of the city, join with me in extending our appreciation and only hope that we might in the future have another chance to entertain you in the style you so richly deserve.

Mrs. Payne sends her regrets that she could not meet the visiting ladies and realizes the loss is hers, but I am happy to say that she is well along the road to recovery and is looking forward to meeting everyone before very long.

Again allow me to assure you of our happiness in serving you and meeting you and hope that we might all meet in Boston in 1941.

W. P. PAYNE,
Chief, Spokane Fire Department.

Fireboat Aids in Evacuation of Dunkirk

The following story appeared in the July issue of *Fire*, which is the official journal of the British fire service. The story, which was told by F. W. Jackson, who commands the fire services of London County, concerns the work of the fireboat Massey Shaw during the evacuation of British and French troops from Dunkirk. During the six days she was absent from her moorings in London River, she was instrumental in saving hundreds of soldiers, many of whom she transferred to larger rescue ships.

"On Thursday last," said Mr. Jackson, "the Government asked for the assistance of a fireboat to help in the evacuation of troops from Dunkirk. It was assumed that she was required for fighting fires on and around the quays. Massey Shaw was under way within three hours, manned by a volunteer crew, under the command of Station Officer H. Youngman."

"The situation at Dunkirk had apparently deteriorated so rapidly that there was no question of fire-fighting, and all available craft were required for rescue work."

"Massey Shaw was instrumental in saving several hundred men on her first two trips, and on the third trip, when she was the smallest craft allowed to cross the channel, it was no fault of hers that she came back without any soldiers. The work performed on this last trip, when she went right into the harbor, was in every way as creditable as that on the other two occasions."

"Having played her part in the evacuation, her adventures were not over," continued Mr. Jackson. "Yesterday, in the Straits of Dover, a French ship close by her was blown up. Once again Massey Shaw saved a large number of lives in very trying circumstances."

"I have purposely referred to Massey Shaw rather than to her crew as having done the work. I do not know if any member of it did work more outstanding than others, and I do not propose to try to find out, as it is obvious that operations of this type can be successful only by the combined efforts of all hands on deck and in the engine room."

"You will see, sir, that although some members of the crew standing are wearing London Fire Brigade uniforms, and some that of the A. F. S., they are all one crew, and I bring this particular point to your notice as an example of the way in which the two services are working together as one."

"We do not claim that Massey Shaw did any more than the many hundreds of little ships that took part in this dangerous job. What we are proud of is that this action confirms once again that, similarly to the Royal Navy, there is nothing that the fire service cannot do."

Fire Breaks Out in Oil Zone

Fire threatened the entire "Tank City" in the northern sector of Syracuse, N. Y., destroying a warehouse, office building, garage and several trucks. Three alarms were turned in as well as several special alarms.

Chief Edward Gieselman and several firemen were entering the rear of one of the sheds when mortar and steel girders dropped, pinning three of the men. All are expected to recover from injuries. About seven tons of fire foam were used by the department. The total damage was estimated to be over $100,000.

A Metal Which Burns

Increasing Use of Magnesium Alloys Requires Special Fire Precautions

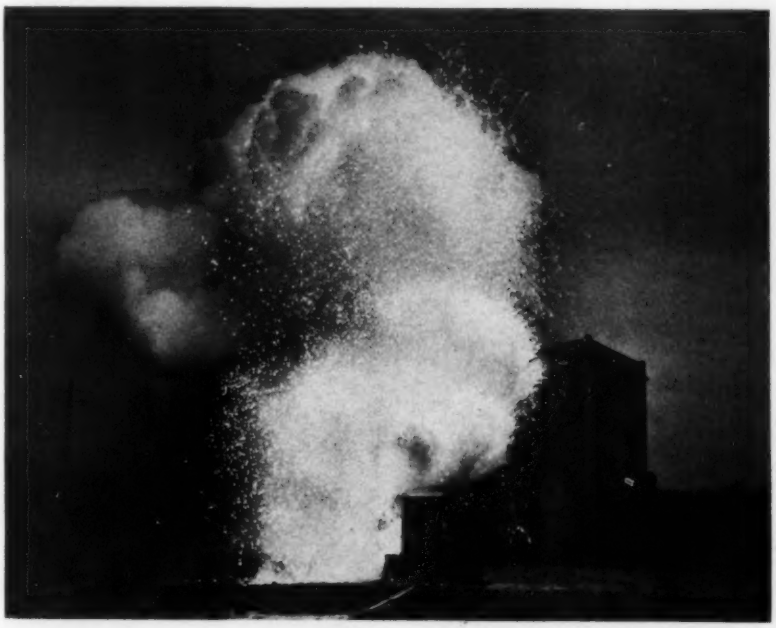
MAGNESIUM is the lightest metal used in structural alloys, approximately a third lighter than aluminum and less than one-quarter the weight or iron or steel. A pound of magnesium for example makes a half-inch square bar 64 inches long, a pound of aluminum a similar bar 42 inches long, and a pound of steel a bar 14 inches long. This lightness combined with strength and toughness makes magnesium when allowed with other metals particularly adaptable for forgings, castings, sheets, and bars; and its use is rapidly increasing, particularly in the aviation, automobile, railroad, structural and metallurgical industries.

Magnesium Burns Intensely

Magnesium and its alloys burn very intensely in powder, ribbon, chip, or dust form. Heavier pieces are not particularly combustible because they rapidly conduct heat away; however, when an entire piece can be brought up to sufficient temperature (about 930° F. for pure magnesium), ignition will take place. Such an instance occurred in a Pennsylvania plant two years ago, when 500 pounds of magnesium alloy slabs one-quarter inch thick were being heated in a gas-fired furnace prior to rolling. Because of inaccurate pyrometer readings, the furnace temperature ran excessively high, probably about 990° F., and the metal ignited, was consumed, and did considerable damage to the furnace. Magnesium oxide carried into the air settled on machinery, which required extensive labor to clean.

Dangerous When Wet

Another type of magnesium fire occurred, during the past year, at a die-casting plant while reclaiming magnesium alloy scrap which had been kept wet with the thought of protecting it against fire. The charge was heated slowly to drive off moisture, but during the process a violent puff occurred and fatally burned two workmen. Because magnesium oxidizes in contact with water and produces hydrogen gas, it was thought that the explosion might have been caused by the ignition of a mixture of hydrogen and air. However, in a Factory Mutual test duplicating the reclaiming process, a 55-gallon drum filled with wet magnesium turnings was heated by an oil burner, but not enough hydrogen was liberated to be ignited, although the magnesium itself caught fire violently in 14 minutes.



Demonstrating a Fire Hazard

The reaction between magnesium and water is slight at ordinary temperatures. It increases rapidly as heat is applied, and violent combustion soon follows.

Smaller quantitative tests also show that the rate at which hydrogen is liberated from wet magnesium alloy chips, even while heat is being applied and up until ignition takes place, is too small to be of any hazard with an average amount of ventilation.

Metal Heats to Combustion

Actually what happens is that heat is liberated from wet magnesium alloy turnings. The amount is slight at ordinary temperatures. It increases as heat is applied until a point is reached where the temperature rises abruptly and combustion follows.

Water supplies the oxygen for combustion of magnesium more rapidly than air. Thus, wet magnesium burns more intensely than the dry metal, and once ignited will continue to burn under water. For this reason, all common water-type extinguishers are worthless on magnesium fires. Carbon tetrachloride in contact with hot magnesium gives off chlorine; carbon dioxide, foam and dry chemical extinguishing agents give off oxygen; and both the chlorine and oxygen combine with the burning magnesium to increase the intensity of the fire.

Oil As An Extinguishing Agent

Some claims have been made for oil as an extinguishing agent, and it is a fact that where magnesium chips are covered with cutting oil, combustion is not so rapid because the air necessary for combustion is cut off from the surface of the metal by the thin oil film. Using oil to extinguish such fires, however, is not advisable because it is difficult to apply without cause the oil itself to ignite.

Fires in small quantities of scrap are best extinguished by powdered talc, cast-iron borings, or similar

inert material such as fine dry sand, although sand being abrasive should not be used around machinery. When the material is in considerable bulk, there is no practical way of extinguishing the fire. Even a building in which it is stored cannot be protected because sprinklers are inadvisable. For example, at a Connecticut plant recently, sparks from a fire under a lead-melting pot set fire to an unsprinklered shed, in turn burning an adjoining shed in which 2,500 pounds of magnesium alloy turnings were stored in wooden barrels and boxes with burlap covers. The plant manager warned city firemen of the presence of the chips, but the firemen, instead of letting the fire in the shed burn or checking it with a small stream and protecting the near-by buildings, played large streams on the burning shed. Water came in contact with the hot turnings and produced explosive bursts of fire, somewhat endangering the near-by main building. The firemen, however, did good work in confining the fire, although the sheds and contents were destroyed at a loss estimated at $5,000.

Intense Burning

Incandescent bursts of fire followed as water from hose streams came in contact with hot magnesium scrap during a fire in this scrap metal storage shed.

House Cleaning Rule

Ordinarily, the value of magnesium and magnesium alloy scrap is low, so that the direct fire loss may be small. Turnings and chips should be removed frequently from machining operations, placed in metal containers with tight-fitting covers, and stored preferably in a detached non-combustible building entirely separate from other combustibles.

In machining magnesium, no water, even in mulsifiable cutting oils, should be used. If dry machining is not practical, a mixture of kerosene and lard oil or straight kerosene is preferable. Turnings should be constantly swept up, so that if ignition occurs at the cutting tool, as it may from friction, the fire will not spread. This once happened in a New Jersey plant, when a high-speed cutting tool of a milling machine came in contact with a steel wedge used to secure a magnesium alloy casting, striking sparks which ignited chips and caused a fire which resulted in costly damage to the machine.

Smothered with Talc

Fire in this pile of magnesium turnings has been extinguished by covering it with talc. The pile should remain covered until cool, otherwise the hot metal in contact with the air will again ignite.

Suggestions for Safe Handling

Magnesium dust in air is highly explosive. In a test bomb, it developed a pressure of 67 lbs. per sq. in.—nearly double that of aluminum or cornstarch, which are considered unusually severe. Because of this high explosibility, ordinary type dust collectors should not be used for removing magnesium dust from grinding operations. A special collecting system is needed, which utilizes a water spray to wash the dust into a trough where it will be carried away as sludge. This should be collected in drums, mixed with four or five parts of sand and disposed of on a dump. In this condition it may still burn but with little intensity. In actual grinding of magnesium alloys, only grinding wheels reserved expressly for this purpose should be used, because if the wheels are also used for ferrous metals, particles may adhere which might produce sparks.

Precautions for Molten Metal

Foundries and die-casting operations using molten magnesium or its alloys should be located in non-combustible, fire-resistive buildings. In melting magnesium, a flux generally composed of sulphur and borax is used which floats on the surface and prevents the molten metal from igniting. Foundries should be on the first floor, with high ceilings, so that in event of fire in the magnesium there will be less likelihood of damage to ceilings or of having fire spread. Concrete or other moisture-retaining floors are not desirable, and hard-burned glazed brick or other equivalent material should be used instead.

Reprinted from *Factory Mutual Record* by courtesy of the Associated Factory Mutual Fire Insurance Companies.

Charlotte Welcomes Its Chief

Charlotte's Chief Hendrix Palmer, returning home August 15 from Spokane with the title of President of the International Association of Fire Chiefs, was met at the railway station with the firemen's brass band, Mayor Ben Douglas and a group of city officials. Later, a banquet was spread in Chief Palmer's honor where the congratulations of the city of Charlotte and the state of North Carolina were expressed at his bringing home the highest title possible in the field of fire-fighting. It is the first time a North Carolina fire chief has been elected head of the I.A.F.C.

On August 26, Chief Palmer was one of the principal speakers at the annual convention of the North Carolina Association of Fire Chiefs at Salisbury, N. C.

D. G. SPENCER.

Radio Proves an Indispensable Department Asset

EVERY year, in increasing numbers, Fire Departments throughout the country are awakening to the advantages that are available in routing and dispatching trucks on various duties, through the use of the radio. As a result, an ever increasing number of the departments are installing either one-way or two-way sets on the apparatus. In order to determine the extent of the installation of radios by the various departments, a survey was made by FIRE ENGINEERING among a representative group of Fire Departments. In the pages following are outlined the various opinions on the use of the radio of those reporting. Therein may be found many useful suggestions for increasing the efficiency of the department as a whole.

Bayonne, N. J.
J. G. Hogan, Chief

We have two-way radios in three Chiefs' cars and two Deputy Chiefs' cars. We have found the radio very beneficial. All alarms broadcast by the Police Headquarters, where all alarms are received, are intercepted by Fire Department cars while between fire houses, and are answered immediately. This saves valuable time otherwise lost should it be necessary to arrive at a fire house before being informed of the alarm.

Our radio is operated in connection with the police radio. A qualified operator is on hand at Police Headquarters twenty-four hours a day. He simply calls his messages over a loudspeaker system into the police radio room where they are put on the air. Should it be necessary to dispatch apparatus or equipment from the scene of a fire, the radio equipped fire car may call Police Headquarters by radio, and the message destined for the Fire Department is heard directly from the car over an interoffice loud speaker and answered back to the car, without the necessity of a relay by the police. The radio we use is manufactured by Fred M. Link of New York City.

San Antonio, Tex.
C. A. Hart, Chief

At the present, we are using one-way radios in our department. Ten cars, including the Chief's car, four District Chiefs' cars, the Fire Marshal's car, the Arson Investigator's car, three reserve cars, and one City Service truck are equipped with these one-way radios. There are no two-way radios at present. I have found the radio to be very beneficial for Fire Department use inasmuch as we are available at all times, thus allowing us to respond to fires from one to another, or while on inspection work, in addition to being available for contact by headquarters at all times.

It is my sincere belief that radio as related to the fire service is indispensable, and we are contemplating installing the two-way sets in our department for more efficient service.

Our radio is operated by the Police Department for their use as well as ours. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. Philco receiving sets are used in our department.

Lansing, Mich.
R. R. Seymour, Chief of Apparatus, Fire and Police Departments

We use one-way and two-way radios in our department. The Chief's car and the telegraph truck are equipped with one-way sets, while the Assistant Chief's car employs a two-way set. The Police Department has seven cars with two-way sets, and seven motorcycles with one-way sets.

We have found the radio very beneficial in that we protect a township that is six miles square. The Assistant Chief's car, having the two-way radio, makes all the fires. The Chief's car keeps in touch with his Assistant regarding the nature and progress of the fire.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Motorola receivers and transmitters that were built by the radio engineers of the Police Department.

Newport News, Va.
G. A. Powers, Chief

We have a one-way radio installed in the Chief's car. We have found this radio very beneficial because I am in contact with anything going on in the department while out around the city. If I am wanted, or an alarm comes in, the alarm operator calls the radio operator at the Police Station, and he puts it on the air. The Police Department cars have two-way sets, and each of these cars can also contact me. A two-way set would be one of the best things any Fire Department could have.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day, the Desk Sergeants at the Police Station being the operators. We use a Goodbar receiver.

Cincinnati, Ohio
B. J. Houston, Chief

We have installed one-way sets in forty cars in the department. We have found the radio beneficial for very quick service in contacting the Battalion Chiefs while they are traveling between stations, or wherever they may be, and informing them of activities, or directing them to any duties that are necessary. I believe that it is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at the Police Headquarters twenty-four hours a day. We use different makes of automobile radio receiving sets, and some were built by the Police Department radio crew.

Bakersfield, Cal.
P. C. Pifer, Chief

Five cars, all fire stations, and the homes of all chief officers and inspectors, are equipped with one-way radios. There are no two-way sets contemplated in the near future. We have found the radio beneficial in keeping in touch with headquarters. We had thirty-eight alarms within eight minutes last summer and the radio was used exculsively to dispatch apparatus as all equipment was out. I believe that the radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. Some of our sets were built by the department, while the others were purchased. Most of those purchased are Philco sets.

Orlando, Fla.
G. Dean, Chief

The Chief's car is equipped with a two-way radio. I have found it beneficial in that wherever I may be, out on inspection or at a fire, I am still within instant communication with the department, or any part of it. Time will prove that the radio's possibilities are almost unlimited in the fire fighting service.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use a Bosch receiver and a Composite transmitter.

Berkeley, Cal.
J. S. Eichelberger, Chief

Four Chiefs' cars and a squad company are equipped with one-way radios. The Chief's car is equipped with a two-way set.

We have found the radio very essential to a Fire Department in all ways, especially on the Squad wagon. This truck handles such calls as for inhalator and other emergency calls. New locations may be given to the squad company either at a scene or a fire or on the road. I believe that the radio is a beneficial asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at headquarters twenty-four hours a day. We use Motorolas and Police Cruiser radios.

Syracuse, N. Y.
E. W. Gieselman, Chief

The Deputy and District Chiefs' cars, five in all, and the Fire Alarm Division truck are equipped with one-way radios. The Chief's car and the Fire Marshal's car are equipped with two-way radios.

These radios have proven to be most

beneficial. A distinct advantage is that they enable the chief officers to pick up fire alarms and emergency calls while enroute on rounds, and they serve as a means of keeping the fire alarm truck in constant touch with the Fire Alarm Division and fire headquarters. We believe the radio to be a great asset to efficiency in fire fighting, but its full possibilities are yet to be realized. The investment in our opinion is justified.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at the radio station twenty-four hours a day. The one way sets are American-Bosch and Philco sets, the two-way sets are General Electric and Westinghouse sets.

Tacoma, Wash.
C. J. Eisenbacher, Secretary

In this department, one car and a boat are equipped with a one-way radio. Four cars are equipped with two-way sets. We have found the radios very beneficial in many ways. For one thing, we can direct the boat home through instructions by radio, thereby saving much time. We can direct the boat streams and call for help. We believe the radio to be an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use American-Bosch and Link receivers. At first we built our own transmitters, but now we use Motorola transmitters and all receivers.

Oakland, Cal.
W. G. Lutkey, Chief

The Chief's car is the only one equipped with a one-way radio in this department. We have not found the radio beneficial. The radio can be a great asset when the Fire Department has their own operators, and it is not necessary for the department radios to be operated through the Police Department.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at headquarters twenty-four hours a day. We use a Stewart Warner radio.

Pasadena, Cal.
E. F. Coop, Chief

The Chief's cars and one engine are equipped with one-way sets, while three Chiefs' cars and one rescue unit are equipped with two-way sets. The radio is beneficial in that it permits instant and continuous contact between officers and the fire alarm office. I believe that the radio is an indispensable asset to efficient fire fighting. Our radio is operated in connection with the police radio, but we have our own transmitter. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. The radios we use were built up by our Police Department and operate very satisfactorily.

Glendale, Cal.
A. H. Lankford, Chief

Three cars are equipped with two-way sets. We have found the radios beneficial in that we can keep in constant contact with the department at all times while on call. We believe that the radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Pierson-De Lane sets.

Holyoke, Mass.
P. J. Hurley, Chief

The Chief's car and the fire alarm truck are equipped with two-way sets. We have found the radio beneficial in that it keeps the Chief in constant touch with Fire Headquarters in case of alarms that are received while he is away from quarters at a fire or on an inspection trip. I believe that the radio is a necessity.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use a radio built by the Harvey Laboratories.

Des Moines, Iowa
C. L. Slade, Chief

We use two-way radios in the three Chiefs' cars in our department. Through the use of the radio, there has resulted perfect cooperation and coordination of the Police and Fire Departments; constant contact with headquarters; quicker response to multiple alarms, reduction in response to residential fires due to being able to call additional help without delay. There are many other helpful uses. I cannot see how we ever went along without the use of a radio in the past.

Our radio is operated in connection with the police radio, with a qualified operator on duty at Police Headquarters twenty-four hours a day. All operators have broadcasting licenses. We have been using Dolittle and R. C. A. sets.

Portland, Me.
O. T. Sanborn, Chief

We use receivers only in our department. The cars of the Chief, Deputy Chief, District Chief, and Assistant Electrician, and a Fire Boat are all equipped with one-way sets. One two-way set is now being tested. If it proves satisfactory, probably all cars and the boat will be so equipped.

Use of the radio has made it possible for the Fire Alarm Operator to contact the chief officers when they were out of quarters or engaged at a fire. It has proven very beneficial, but two-way radios would be even more satisfactory, especially in the control of the fire boat operating at a fire on the water front.

The transmitter is located at the Police Headquarters and a qualified operator is on duty at headquarters for twenty-four hours a day. The sets that are used at the present time are Crosley, Motorola, and Philco.

Birmingham, Ala.
A. Brown, Chief

We use a radio on the Chief's car only. That radio is only a one-way set.

We have found it very beneficial, because through a police car which has a two-way set, the Chief can issue instructions to the operating room of the Fire Department which operates on short wave continually.

Our radio is operated in connection with the police radio, and there is a qualified operator on hand at Police Headquarters twenty-four hours a day. Our radio was built by the Police Radio Department. All police cars have two-way sets and a radio car answers all fire alarms. I communicate to the Fire Alarm Office through this car.

Springfield, Mass.
H. C. Root, Chief

We use one-way equipment in our department. Eight cars in all, namely, one Chief's car, one Deputy Chief's car, three District Chiefs' cars, one spare District Chief's car, the Superintendent of the fire alarm car, and one fire alarm truck, are equipped with these sets. We have found these sets beneficial in that we are constantly in contact with the fire alarm office receiving fire alarms and all other necessary calls when out of touch with the fire station. I believe that the radio is an indispensable asset to efficient fire fighting. We receive messages over the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Westinghouse equipment.

Cleveland, Ohio
J. E. Granger, Chief

We use both one and two-way radio sets in our department. The Chief, the two Assistant Chiefs, eight Battalion Chiefs, and three Rescue Squads all have their cars equipped with two-way sets. Five Battalion Chiefs and the Superintendent of the Signal System have their cars equipped with one-way radios.

Through the radio, immediate contacts can be made with the chief officers when they are out of quarters; immediate contacts can be made with the police and the fire alarm office; the Chief and some of the equipment can be prevented from making long runs, when it is found that their services are not required; and general use can be made of the Rescue Squad.

I believe that the radio is an indispensable asset to efficient fire fighting. Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Western Electric equipment and receive our messages over the police operated station WRBH.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Motorola and R. C. A. equipment.

Dubuque, Ia.
W. L. Ryan, Chief

We have one two-way set in the department. We have found it very beneficial. It enables us to keep in constant contact with the department in order to receive calls when absent from the station, and it enables calls for additional help without the use of the telephone in sections where telephone use is limited.

I believe that the radio is an indispensable asset to efficient fire fighting. Our radio is operated in connection with the police radio. There is a qualified operator on duty at Police Headquarters twenty-four hours a day. Collins Radio equipment is used.

(To be continued)

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

SOUNDING ALARMS WHERE DIAL TELEPHONES ARE USED

WITH the introduction of the dial telephone which did away, in a large measure, with the telephone operator, the volunteer firemen were brought face to face with a new problem.

With the old system, the volunteer firemen depended upon the telephone operator to sound the fire alarm during the hours when there was no one present at the fire station. With the new system, there is no operator to provide this service, for the very purpose of the dial telephone is to do away with manual exchanges.

It is believed, therefore, that the present discussion will have an especial appeal to officers of volunteer fire departments. The problem in full appears in the box on this page. In the box on the following page, is the problem that will be presented in the next issue of FIRE ENGINEERING.

Discussion of the Question

Dick Van Valer, Secretary, Gas City Fire Department, Gas City, Ind.: Our volunteer department has fourteen members. With the adoption of the dial telephone, we made our fire telephone number at our city water works where there is a man on duty twenty-four hours a day. He calls each of the firemen by telephone after he has sounded the siren which is located in the business district. He calls the fire chief and two other men who drive the apparatus before he sounds the siren.

On two test runs, we have found that we are able to answer and be at the scene of the alarm in not more than five minutes after the alarm is turned in under our system, which means we must drive the extreme distance of sixteen city blocks from our station to the extreme distance that we answer the alarm. The first man to our station is the driver of the first piece of apparatus and the second man is the driver of the second piece. The first man writes the address of the alarm on the blackboard before he leaves the station.

The reason we call at least two men before our siren is sounded, is to give the apparatus a chance to get out of the station and in the clear before the public gets in the road at the sound of the siren.

B. R. Higgins, Engineer, New Carlisle, Ohio: Just last September, we had the change to dial telephones made in our town. The following is the system we use. In the engine house we have two phones. one a regular type and the other (the fire phone) has no dial on it. It, therefore, is always ready for incoming calls. This phone has an extension bell (ten-inch gong) outside the engine house and an extension phone of the same type in a residence of some party who has some one at the house twenty-four hours a day. The ring on this phone is four short rings.

We use a siren for a general alarm, the siren having remote controls on it, one outside the engine house and the other at the extension phone in the residence.

The siren can then be sounded from either place regardless of where the call is received.

For our still alarms or rural calls, the siren is not used, but the other or regular phone is then used to call in the necessary help for this type of fire run.

We have found the telephone company very cooperative in helping to establish a system after our exchange girls were replaced by dials.

J. H. Patrick, Chief, Laramie, Wyo.: Laramie was the first town in the state of Wyoming to adopt a dial telephone. The system went into effect in 1921.

For several years thereafter, we experienced considerable difficulty in the reception of fire alarms and it was the old story of "Wolf, wolf" every time the telephone rang, and the boys were never on their toes, for the usual request was one for groceries, meats, taxicabs, etc.

The local manager of the telephone company, at our request, made the dialing of our number (2153) a direct wire connection to the operator in charge, who requested the caller to indicate whether they wish to report a fire or not. If not, she cancelled the call and held up the ring. Now all calls go through her and she rings directly if a fire is reported and the officer receiving the call obtains location and other information. The operator listens in, checking the calls and correcting them where necessary.

All of the previous trouble has been entirely eliminated and every ring on our telephone is now a fire or an emergency call, while the number 2153 has been stricken from the book and the number 0 substituted.

Since we do not have a siren or code system, we are not troubled with this phase of the problem. However, it seems to me that the telephone company could institute a similar system and the telephone operators receive and transmit the call in code over the department siren.

C. G. Lipps, Chief, Abilene, Kan.: We do not have a dial system as yet, but two smaller towns close by have just changed to dial. I have visited with firemen at both places, and they find it better than the old system.

Both towns have the same dial number to record a fire, so in the front of the telephone book under "emergencies" the fire department is plainly visible. Both towns have their fire station in connection with the city clerk's office. There is an extension telephone also from the city clerk's office to a business place that is open day and night. In one of the towns the extension is only fifty feet to a restaurant, where the driver works and lives. In the other town, the extension phone is across the street at a hotel.

The telephone company has installed a loud horn on the outside of the fire stations that will blow until the phone is answered. There is a control at each telephone to operate the electric siren. The volunteers are not called, but have to depend on hearing the siren. The dial phones have not been in use long enough to tell the exact results.

In case several people try to turn in an alarm at the same time, the first one to dial will be the only one on the line. The other people trying to get the fire station can dial the operator and report to the operator the information. The operator can listen in on the conversation that is going on. She can then "cut in," if necessary, and tell both parties talking that she has additional information. The person trying to get the station may want to report the fire out, so when they find the line busy, they can dial operator and report to her.

Neither one of these towns has a

HERE IS THE PROBLEM

With the adoption of the dial telephone, many small fire departments have experienced difficulty in sounding a fire alarm, for there is no all-night attendant to sound the siren, or have it sounded.

Have you experienced this trouble?

Have you found any solution to it? If so, how?

telephone operator on duty. They do have a building for their automatic dial system, but their nearest operator is here in Abilene, six and twelve miles from the fire.

I am not satisfied that the dial would be better for my department, because I have both paid firemen and volunteers. The siren will not carry far enough to awake all of the volunteers at night. I do think that if we go to dial, that it will mean the fireman answering the telephone will have to dial the operator on our regular phone while he is answering the fire phone. When he has received the fire information, he can then tell the operator to call the firemen off duty and the volunteers.

L. Z. Bartlett, Chief, Twin Falls, Ida.: We do not have the dial telephone system in our city, therefore we have not had any experience with it. It seems in this case that it would be almost necessary that someone sleep at the station at night.

One thought that might be worth considering would be to make arrangements wherever possible, to dial some local business that offers all night service, such as service stations, cafes, hotels and others.

F. C. Stoots, Chief, Bowling Green, Ohio: The dial system has caused no problem here. The fire alarm siren is operated by the telephone operator from the telephone exchange, and as there is at least one operator on duty at all times, the alarm is sounded as efficiently in the "wee small hours of the morn" as at noon-day.

Fires are reported to the operator after dialing zero, and the voluteers get the location of the fire by dialing zero or 13 and giving the operator our code word. The code word is changed occasionally when too many outsiders have learned what it is and have used it without authority.

We have one driver on duty at all times, although our population is such that by state law, we could have seven full time men, instead of two full time and one part time, if the people demanded it.

John J. Roche, Chief, Clarksville, Tenn.: We do not have the dial system in our town. We use the flash light system. When the receiver is taken down, central answers.

We have our siren on top of the fire department building with a switch in the office and a man to sound the fire alarm. He is called "house man" and does not go to the fire.

H. Case, Chief, Las Vegas, Nev.: We do not have dial telephones here, but for a long time, the operator sounded the fire siren. However, I changed this by installing a push button in the police station and then advertised the fact, with the result that now most of our people call the police department to report a fire and the desk sergeant sounds the siren.

E. H. Wheeler, Chief, Franklin, N. H.: We do not have the dial system. There is an operator on duty twenty-four hours, and she has been very helpful and efficient in giving us information on calls over the telephone. Our city has the Gamewell fire alarm system with thirty-three street boxes, so that most of the calls that come in for fires other than chimney fires are for locations outside the box circuit. On our fire alarm card which is given to all citizens, there are instructions about calling the department for chimney fires, telling them to talk plainly, to be sure to give the correct address and the person's name and not to hang up until they are sure the men at the station understand all that it is necessary to know. We have had very little trouble regarding these calls.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Have you had any fires which extended through buildings by way of air conditioning systems?

If so, what type of structures did they involve?

Have you any regulations governing installation of such systems to reduce the fire hazard therefrom?

If so, briefly what do they include?

Henry Milsom, Chief, Kittanning, Pa.: To date, the local telephone has not changed over to dials. Therefore we have yet to meet this condition. Because of the amount of toll charges in the local exchange and the size of the same, it will no doubt require personal supervision at all times. We have three sirens and one Gamewell city bell, all operated by the central. The bell is also used for police calls. All alarms are verified over the telephone system.

S. R. Cumpston, Chief, Catlettsburg, Ky.: I believe that if there was no attendant to sound the fire siren, it would be necessary to locate and make arrangements with some factory or all time open establishment for setting off the fire alarm. And if this couldn't be done, there is only one other thing to do, which is to have an attendant at the station. With the dial system, there is a chance that people will be too excited to dial correctly.

The local water company, when working on a twenty-four-hour period sounded our alarm. When they went on one eight-hour period, we had to change our alarm system. We now have an attendant to sound the alarm. It seems to me that it would pay the community to have a twenty-four-hour attendant to sound the alarms.

A. F. Raddant, Chief, Gladstone, Mich.: We have an all night attendant and so are not troubled with the problem of sounding fire alarms.

L. R. Morris, Chief, Ames, Ia.: We have one exchange with the dial phones and have had a number of false alarms, and I think we will continue to have as there is no way of tracing a call. I believe that the dial phone slows up the calls. We have a paid department so it is not necessary to call other men, except in the case of second alarms.

W. H. Weidensall, Chief, Beckley, W. Va.: My department has regular men and six volunteer firemen that sleep at the station every night. We have our siren on the roof of the fire house and sound the alarm when the equipment leaves the station. The man on duty writes the location of the fire on a blackboard, and the firemen come to the station if they hear the siren. If not, a fireman at the station calls all the volunteers by telephone. We do not have the dial system at present, but the telephone company is planning to adopt it.

The only plan I see that will work with a volunteer department where no firemen stay at the fire house is to have a telephone in the fireman's home nearest the fire house, and when a fire occurs, the call will be dialed to his home. He can run to the fire house and sound the alarm, and also call the remainder of the firemen by telephone. Of course, it will be necessary for everyone to know his number and the telephone company would have to post the dial number at each telephone.

George K. Angius, Chief, Miami, Ariz.: We are not confronted with this problem as we have a Gamewell fire alarm system and our telephone service isn't of the dial type, telephone operators being on duty twenty-four hours daily. Fire calls by telephone are put through to the station at all hours on our fire phone.

From my experience as to operating any auxiliary fire alarm equipment such as lights, sirens, gongs, etc., by means of the telephone, this problem can be overcome very satisfactorily. The telephone company will install a relay on the telephone whereby such equipment as sounding sirens for a fire alarm by means of the telephone can be done very easily. By means of the relay, the siren is sounded automatically each time the telephone rings.

There is a nominal monthly charge for this service. As it is the property of the telephone company, it is kept in repair by them and they see to its operation.

Frank Lord, Chief, Clifton Heights, Pa.: For a long time we had the following system in service. When the phone in the fire house rang, a relay closed the siren circuit by closing the magnetic switch of that circuit. This stayed closed until someone caused the magnetic switch to open manually.

When this circuit was closed, it caused a slow revolving disc to revolve so that with every semi-revolution, the power was shut off for one-half a revolution and on for the other half-revolution, causing the siren to sound for short intervals. With this system, all that was necessary to sound the alarm was for the local phone operator or anyone with a dial phone to ring the phone in the fire station and the alarm would be automatically sounded. But they had to wait until someone arrived at the fire station to receive the location of the fire. In case the phone was rung accidentally, the alarm sounded and continued until someone shut it off at the fire station. We have, however, had very few calls of this type.

The early part of this year a teletype system was added, connecting five other companies with us. This is operated from a nearby police station, giving a written message to all six companies at the same time. They also sound the alarm for us as they are the only ones who can ring the fire alarm phone for any of the six companies. All fire calls for these six companies must go to this police station.

As it is necessary to ring the phone

at the fire station in order to sound the alarm, it is possible for anyone at the fire station to lift the phone receiver and talk to the police operator on duty at any time and acknowledge their own calls and then set off their own alarm. When returning from a call, the service officer reports "Back in service." Then a teletype message is sent to all companies. This is done so that the "cover-up company" will not move in on the next alarm. A police radio is also used when police are needed in some districts.

I believe this is a very good system for it gives the fire companies a man on duty at all times and also police protection when needed.

K. W. Parker, Chief Conway, Ark.: We do not have the dial system in our city as yet, although it is likely to be placed here within a short time.

However, we are certain, from years of experience in the use of the telephone in fire department activities, that the dial system is certain to cause a slowing up in the transmission of telephone fire alarms.

Here in Conway, and I presume the same condition will prevail in cities of similar population, many residents do not know their house numbers and often not even the name of the street they live on, which adds to the excitement of the one trying to turn in the alarm. Hence the difficulty along that line. In addition, in a majority of cases, the party simply calls for the fire department or even the fire trucks. that could not be done with the dial phone.

F. H. Malone, Chief, McCook, Neb.: We use the regular telephone from 7 a.m. to 7 p.m. In case of fire, the telephone company sounds a whistle which is located at the power house of the C. B. & Q. Railroad Company. This is done by phone. Then the firemen call me to find out where the fire is. From 7 p.m. to 7 a.m., central office calls each fireman at his home and then calls for the whistle. Reporting a fire by telephone is done to the central office. Then, in turn, the office calls the fire apparatus and calls the power house for the siren to be sounded. We have had fairly good luck with this system.

L. B. Martin, Chief, Clearwater, Fla.: We have had no trouble in sounding a fire alarm with the adoption of the dial system, as we have a fireman on duty all night.

Stuart M. Potter, Chief, Greenwich, Conn.: We do not have this trouble as we have permanent drivers on duty at all stations, who transmit the alarms.

Gordon G. Cushing, Chief, Rochester, N. H.: We do not have this trouble at the telephone exchange. I would suggest, however, that a switch could be cut in on the siren and installed outside of the office as an alarm box, to be used when the operator is off duty.

C. C. Cheney, Chief, Loveland, Col.: Our trouble has been to get the perator while and after the siren has sounded. We have just worked out a code for department members only, where we take down the receiver and call the month just past and the operator gives the location of the fire. To all others she tells that she does not have that information. Over a period of two months, we have reduced the calls coming in until we are able to get real service through our telephone office and they are not bothered with regular calls from curious.

* * *

Answers to Previous Questions

The following replies were received in answer to a previous question on the drying of fire hose:

F. Dubois, Chief, Kenora, Ont.: I have seen hose racks being used, also semi-length hose towers and full length hose towers. I believe that hose that is hung up full length in a tower to dry, gets much more beneficial service for its upkeep and maintenance as it dries in an air conditioned manner inside and outside. It also gets stretched. I do not believe the hose can dry properly on racks because of the layout. As for the new drying cabinets that we see advertised, they may give service, but I never did see any great success obtained where artificial force was used. I cannot see how the interior of the hose can be dried quickly without doing the hose an injustice.

Our fire hose is our first line of defense, or you may call it offense. It cannot be too well looked after if you expect it to give the service needed, when it is needed. In my opinion, the old hose tower system is yet the most reliable way of looking after hose and giving it the chance it needs to give its maximum service.

John M. Slocum, Chief, Huntington Park, Calif.: Our method of drying hose is in a tower with air circulating from bottom to the top. The hose is hung over five-inch spools at half length, allowing the hose to drain. After the hose is dry, it is removed from the tower, rolled and placed in racks.

We do not advocate hanging any hose by coupling lugs, or letting it hang too long in the tower.

J. J. Gillis, Chief, St. Cloud, Minn.: We have a fifty-foot hose tower, with a ventilator at the top to keep fresh air circulating through all the time. We have found this very satisfactory.

John J. Cullinan, Chief, Morristown, N. J.: We have a very satisfactory method of drying our hose here in Morristown, N. J. At the rear of one of our fire houses we have a frame tower which is thirty-two feet in height, twelve feet square at the base and eight feet, six inches square at the top plate. Three feet down from the top, are mounted two six by eight inch beams, four feet apart and level. They support ten hickory poles, each of which will hold ten lengths of 2½-inch hose suppended from their centers. These hickory poles are five feet in length, and are tapered, being two inches in diameter at the ends and two and a half inches at the centers.

The hose is drawn up in the tower by a one-half-ton electric cable hoist, which is hung on a four by six inch steel I-beam. The hoist may be moved across the I-beam as it is on rollers, and it may be controlled from any point in the tower by means of control ropes.

When the hose has been hauled to the top of the tower, it is spaced by a man who walks on a twenty-inch catwalk which encircles the inside of the tower, six feet below the top.

There are four double hung windows at the top of the tower, one at each side to provide ventilation. Windows are also located at the base of the tower. The tower also has a large pot stove for use during the cold weather and rainy damp periods. Hose is usually left in the tower for a period of forty-eight hours, or until thoroughly dry.

We have been using this method for about fifteen years and find it very satisfactory.

G. T. Haskins, Chief, Greenwood, Miss.: We use ventilated racks consisting of two by four wood racks supported in the center with six by six posts. Each rack will support fourteen sections of fire hose. Each section of hose is separated and stretched full length. Rack has a twelve-inch drop for draining. This rack will accommodate 8,000 feet of fire hose. We place wet hose on the bottom racks and the dry hose above. We do not have to move hose after washing and placing on racks, as the hose drying house is constructed entirely of concrete with twelve-inch walls and a concrete roof. It is built into the engine house. We use overhead doors which keeps each end of the hose house well ventilated. We have used this method of drying hose for the past four years and have found it very satisfactory. All of our extra fire hose is stored in this house.

George T. Cogan, Chief, Portsmouth, N. H.: In this department, we use a drying rack in the cellar, and so far have found it quite satisfactory. We had a hose tower before, and did not like it because it weakened the hose at the coupling.

Our rack has a drop of one foot, but I would suggest that anyone building a new rack, make the drop at least eighteen inches.

W. E. Twitty, Chief, Lubbock, Tex.: We use a combination hose and drill tower to dry our hose. The tower is sixty feet high with dividing wall in the center. The hose is hoisted to the top of the tower by a two-way electric hoist and is washed and dried in full lengths. In summer it is dried by natural draft, in winter by heat from boiler stack which is of steel and runs the full height of the tower. There is a pit at the bottom of the tower for scrubbing when necessary.

G. M. Twaddle, Chief, Reno, Nev.: Our hose is dried by hanging in a fifty-foot tower. Air is forced up through our air conditioning system. This dries the hose in short order and has proven very satisfactory.

Roy Elliott, Chief, Medford, Ore.: We use the hose tower for drying our hose.

If weather conditions permit, it is dried in the sun, but not left out in it for any length of time as sun is injurious to the rubber. As soon as the outer jacket is dry, the hose is then put in the tower and looped over a rounded surface rather than hanging from either end, as the latter method places too much weight on the hose. We have found this method very satisfactory.

J. J. Clark, Chief, Iowa City, Ia.: We formerly had one rope for each section of hose and a pulley at the top of a fifty-foot tower. The hose was pulled up fifty-five feet and the rope fastened at the bottom. Now we use one rope to pull the hose up. One man goes up and lays the hose on the roller. It is then pulled up only twenty-five feet for the hose is fastened in the middle.

War Preparedness Featured at I.A.F.C. Conference

Program of Unusual Interest Presented at Sixty-Eighth Annual Meeting

ALTHOUGH the attendance at the Sixty-Eighth Annual Conference of the International Association of Fire Chiefs, held at Spokane, Washington, August 5-8, was a little below that of preceding meetings, it proved to be one of the most interesting and instructive meetings ever held by the Association. The total attendance at the conference, including guests, was approximately 500.

The program centered largely about preparation for war emergencies, and reviewed the needs of a fire service as well as methods of operation in the event that war reaches the shores of this country.

The conference was opened Monday morning, August 5 at 10:25 a. m., by Pres. Ray Tiller, and the usual opening ceremonies followed. Chief W. B. Payne, of Spokane, and A. B. Colburn, Commissioner of Public Safety, extended the welcome of the city to the guests.

Response to addresses of welcome was delivered by Chief F. P. Higgins of Grand Rapids.

Year's Work Reviewed

In his presidential address, Chief Tiller reviewed the work of the Association during the past year, and pointed that Managing Director Chief Scott, with approval of the Board of Directors, had formulated a plan for sections within the Association. At the present time, plans call for the formation of eight such sections, others to be added as demand may develop. Initial sections to be added include: Fire Alarm, Fire Investigation, Fire Prevention, Fireman Training, Mechanical Maintenance, Public Relations, Salvage Operations, and State Fire Marshals.

Chief Tiller pointed out the need of unity in the Association, and emphasized the danger of weakening the organization by withdrawal of any section.

"Every divisional organization should make a special effort to interest small paid departments and volunteer departments," said Chief Tiller, "as the large amount of educational material produced by the International Association of Fire Chiefs would be of tremendous benefit to a small city or volunteer organization."

Memorial Service

The Memorial Services immediately followed the opening exercises. Rev. Father M. Flaherty, S.J., delivered the memorial address, following which a list of those members who had departed during the last year was read by Executive Secretary Jay Stevens. The list is as follows:

Chris Ball, Long Island City, N. Y.
Stanley Barnaby, New York City
John M. Beck, Chief, Lehighton, Pa.
E. H. Bonham, Los Angeles, Cal.
George M. Bowers, Chief, Rome, N. Y.
Roger Boyle, Jersey City, N. J.
George F. Brody, Marlboro, Mass.
William D. Brown, Chief, Kingston, Pa.
William E. Carty, Ex-Chief, Burlington, Vt.
P. J. Caulfield, Chief, Piqua, Ohio
Edward E. Chase, Ex-Chief, Lynn, Mass.
Rufus A. Crittendon, Chief, Haverhill, Mass.
W. H. Daggertt, Ex-Chief, Springfield, Mass.
S. P. Elias, Modesto, Cal.
Frank Ernwein, Chief, Oneida, N. Y.
Daniel W. Flynn, Ex-Chief, Great Barrington, Mass.
Walter Fraim, Chief, Lansdowne, Pa.
J. Milton Galvin, Chief, Naugatuck, Conn.
Max Gundloch, Ex-Chief, Bakersfield, Cal.
A. W. Gunnison, San Francisco, Cal.
Eugene F. Hackett, Assistant Chief, Milwaukee, Wis.
W. C. Hascom, Denver, Col.
Gustave Hausman, Ex-Chief, Ridgefield, N. J.
Clarence Heller, San Francisco, Cal.
J. Lester Howland, Chief, Hyannis, Mass.
Walter Hurrill, Ex-Chief, Cape May Court House, N. J.
John Kenlon, Ex-Chief, New York City
Alfred Kinsella, Belmont, Mass.
William N. Lippold, Assistant Chief and Drill Master, Milwaukee, Wis.
Leo Lynch, Chief, East St. Louis, Ill.
J. D. Machomich, Los Angeles, Cal.
Frank F. Martin, Ex-Chief, Cohasset, Mass.
Floyd E. McGlauflin, Chief, Presque Isle, Me.
James B. McMahan, Seattle, Wash.
F. J. Morris, Ex-Chief, Lawrence, Mass.
James T. O'Donnell, Chief, Salvage Corps, St. Louis, Mo.
Albert T. Olson, Walpole, Mass.
Felix Perres, Chief, Rayne, La.
L. B. Rapp, Chief, Lynchburg, Va.
George M. Robinson, San Francisco, Cal.
William H. Schlosser, Captain, Philadelphia, Pa.
W. R. Shaber, Chief, Sparks, Nev.
William J. Smart, Captain, Philadelphia, Pa.
Kenneth C. Smith, Oakland, Cal.
W. W. Tebbetts, Captain, Los Angeles, Cal.
Charles F. Traung, San Francisco, Cal.
Millard Fillmore Tyson, Ex-Chief, Louisville, Ky.
George A. Wallace, Ex-Chief, Cleveland, Ohio
George S. Weir, Chief, O'Hara Township, Sharpsburg, Pa.
H. B. Wells, Chief, Newberry, S. C.
T. A. Withers, Kansas City, Mo.

Conference ratifies action of Board of Directors in establishing Office of Managing Director; Office of Managing Director continued.

Duties of Educational Committee transferred to Board of Directors.

First and Second Vice-Presidents designated as sole representatives on the Board of Directors from their respective districts.

New sections formed, including: Fire Alarm Supts., State Fire Marshals, and Master Mechanics.

Strengthening of fire service urged.

Change in name of Association proposed.

Government may comamndeer fire apparatus now being built in fire apparatus plants.

Urge government financial support for municipal Fire Department improvements.

Chief W. H. Palmer, Charlotte, N. C., elected President.

Chief W. R. Williams, Fresno, Cal., elected First Vice-Pres.

Chief Andrew Callahan, Harrison, N. J., elected Second Vice-Pres.

Chief Daniel B. Tierney, Arlington, Mass., elected Secty.-Treas.

Jay W. Stevens, San Francisco, reappointed Exec.-Secty.

Boston wins 1941 Conference.

Refrigeration and Volatile Inflammable Hazards

Monday afternoon's session opened with routine business, following which the Conference listened to an address by radio delivered by Herbert A. Friede, Superintendent of Fire Alarms of Washington, D. C. at Washington. Mr. Friede, reported as Chairman of The Fire Alarm Committee of the International Association of Fire Chiefs.

He extended the greetings of International Municipal Signal Association and concluded by inviting the International Association of Fire Chiefs to hold its Annual Conference in Washington in 1941.

At the conclusion of Mr. Friede's

A Few of the I. A. F. C. Officials at the Spokane Conference

Left to right: Chief W. H. Palmer, Charlotte, N. C., President; Chief Andrew T. Callahan, Harrison, N. J., Second Vice-President; Chief Daniel B. Tierney, Arlington, Mass., Secretary-Treasurer; Chief Ray Tiller, Waterloo, Iowa, Retiring President; Chief Jay W. Stevens, Executive Secretary; Chief Ralph J. Scott, Managing Director; Chief Art. J. Baker, Lewistown, Mont., Retiring Director.

radio talk, reports from various district associations of the International were given. The reports indicated that the district organizations were progressing satisfactorily and that further increase in membership in the International may be expected.

Refrigeration Hazards

The first scheduled paper on the program was delivered by H. T. Orebaugh, Engineer, York Ice Machinery Corporation. Mr. Orebaugh discussed "Hazards of Fire Fighting in Community Food Preservation Plants."

The growth of community refrigeration plants, wherein those in the immediate community or surrounding rural districts store freshly killed meat for use any time during the year, has been very rapid. Even small towns in farming districts may now have large refrigeration plants. Mr. Orebaugh discussed the possible hazards in connection with operating on a fire in such a plant, and pointed out that such hazards were not severe due to the unusual type of construction of the plant. He added that accidents have been few and far between and that possibilities of fire in locker plants spreading are quite remote, as the thickness of the walls prohibits the fire from burning through before help arrives.

Fire Hazards of Spray Application of Finishing Materials

This paper, prepared by H. E. Newell, Assistant Chief Engineer, National Board of Fire Underwriters, was read by Mr. Clarence Goldsmith, Assistant Chief Engineer of the National Board's Chicago office in Mr. Newell's absence. Mr. Newell reviewed the hazards of lacquers, paints, enamels, varnishes, oil stains, shellacs and mixtures of these materials. An analysis of fires started by these materials indicated there were four principal causes:

First: Broken electric lamps and other electrical defects;

Second: Result of careless cleaning interior of booths, fans and motors with highly flammable solvents;

Third: Accumulations of deposits or residues in the tubes and vent pipes resulting from neglecting to clean them frequently;

Fourth: Improperly arranged or designed equipment of booths, fans and motors for removing the vapor-laden air.

In concluding, Mr. Newell called attention to the fact that industries involving so many inherent fire hazards are striking illustrations of the need of systematic fire prevention inspections by the fire department. To intelligently and effectively combat the kind of fires to be expected in such industries, at least the chief officers should be thoroughly informed concerning the general construction and layout features of the plant, and location and character of hazardous processes, the nature of dangerous materials involved, and the place and method of storage and handling.

Preparation for War Emergencies

The first business on the Tuesday morning program was the presentation of the report of the Committee on Preparation for War Emergencies of which Chief W. H. Palmer, Charlotte, N. C., is Chairman.

Chief Palmer reviewed the work of the Committee during the past year and recommended a substantial increase in manpower of the fire service. Chief Roscoe A. Foster, of the Norfolk Navy Yard, Portsmouth, Va., in discussing the report of the committee, stated that it was imperative that the fire service should impress upon municipal officials the extreme emergency brought on by the war, and need of being fully equipped with dependable fire apparatus.

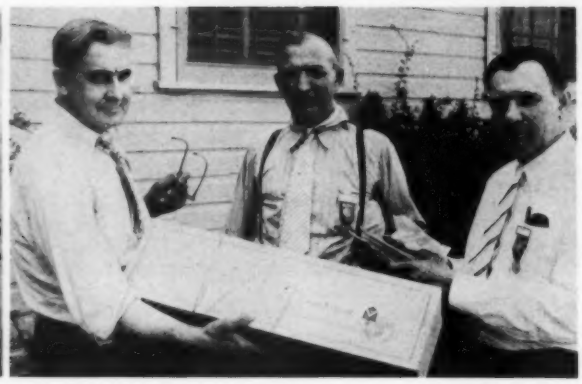
Cutting Personnel

"In the last twenty years," said Chief Foster, "there has been a move by city officials throughout the country to reduce manpower and equipment in the fire service. And it isn't the apparatus that puts out the fire. It is the manpower that mans the apparatus. We should impress upon our cities and towns the necessity of building up the manpower so that every company unit can be brought to its full strength. If the emergency arises, you won't be able to call in four and five engine companies in every locality, because you won't have enough to cover all the fires which will occur at one time. Each engine will have to do its maximum, and manpower is necessary to man each piece of machinery and accomplish this end."

Chief G. R. McAlpine, Oklahoma City, Okla., described the Oklahoma City Defense Battalion, consisting of 2,500 enrollees in divisions and units, which have been formed in that city. One of the tasks accomplished by this plan is the complete indexing of all persons in

A Few of the Outstanding Figures at the I. A. F. C. Conference at Spokane

Left to right—left, Chief Hugo R. Delfs, Lansing, Mich., who was made an honorary life member and recently celebrated his 50th year in the fire service. Center, President V. C. Stanley and Board Chairman B. J. Baker of the Gamewell Co., with Mrs. Baker. Staged under the personal direction of Mr. Stanley, Gamewell Night again, as in the past few years, proved one of the top entertainment features of the convention. Right, Ex-Chief James Mulcahey of Yonkers, N. Y., who retired as I. A. F. C. Secretary-Treasurer, and was made Secretary-Treasurer emeritus in appreciation of his many years of fine work for the organization.



There Was Plenty to Be Happy About at Spokane

Left to right—left, in front, Wm. C. Schleinitz, Pres., Dayton Fire Equipment Co., Dayton, O.; standing, Chief and Mrs. H. A. King, East Cleveland, Ohio; Mrs. Schleinitz, Chief and Mrs. C. A. Delaney, Lakewood, Ohio, and Chief Ed. Welch of Columbus (one of the candidates for the 2nd vice presidency). Right, Chief Al Herring of Murphysboro, Ill. (center), is remembered on his birthday with a box of roses and a batch of telegrams from home, the presentation being made by the convention host, Chief Payne (left) and President Ray Tiller.

the city of Oklahoma, including a special list of those whose activities would be watched in the event of this country becoming involved in war. Approximately 1,000 names of the latter class have been compiled. A directory has been prepared of the members of the Battalion, and this directory includes the home address, telephone number, and other information on each name which appears. The Battalion also has an Intelligence Division set up for the purpose of checking up on questionable individuals, conducting investigations, guarding industries within the city which may be subject to attack or sabotage and cooperating with other law enforcement bodies in the city.

Chief S. J. Pope of Boston, Mass., described the auxiliary fire fighting force created in his city. The department secured from the Massachusetts Civil Service Commission a list of eligibles for admission to the fire department in the city of Boston. This list includes some 500 names. These men were invited to join the auxiliary force, which they did almost to a man. In addition, volunteers were invited to enter the organization, with the result that at the present time the city of Boston is training 1,000 men in the fire department who are serving as an auxiliary fire fighting force.

The Work of the Fire Service During and Following Air Raids

In discussing this topic, the author, Fred Shepperd, Editor of FIRE ENGINEERING, reviewed the various types of bombs employed in present day warfare, the effects created thereby, and the results produced by their use. He pointed out that a single modern bomber may start 200 different fires at one time, and urged the strengthening of the fire service in both personnel and in equipment to a point where the tremendous fire hazard caused by aerial warfare could be handled.

"If the fire service is to take the responsibility of protecting the homes and factories of this nation, it should be given the whole-hearted support of its city officials. There are few fire departments today which are up to strength manually and mechanically.

"Are our municipal officials, like the War Department, going to wait until war is at our doorsteps before they recognize the dire need of a stronger fire service? Are they going to wait, in replacing obsolete apparatus, until the threat of devastating fires is right upon us, only to find that the manufacturing capacity of our fire apparatus plants is sufficient to take care of peacetime needs alone? Are they going to procrastinate until all skilled mechanics, capable of building fire apparatus, are engaged in other wartime activities?

"If all apparatus needed for replacement of obsolete machines in the fire service were ordered today, the manufacturers could not turn them out in five years, even if they could get the workmen needed to man all the shop equipment they have. There is not a more vital defense in time of war than the defense against fire, and yet our city officials seem prone to wait until war has been dropped on our doorsteps in the hope that they can get what they need in the way of fire protection at the moment they want it. If the Fire Chiefs do their part in requesting needed apparatus now, they will be freed of blame when fire apparatus builders run into the inevitable jam which must occur as soon as rush orders in number begin arriving from cities from coast to coast.

"One big fire caused either by aerial bombardment or sabotage will cost a city, directly or indirectly, far more than the expenditure needed to bring the fire department up to strength. If ever full rosters were needed in the fire service, if ever modern dependable apparatus were required, it is now. It will be too late to modernize after the sky is clouded by enemy airplanes. No amount of frantic action, no last minute appropriations, no matter how big, can correct overnight the disastrous weakness of the fire service brought about by years of procrastination.

"If war is to reach our shores within a year, even now we would be late in starting to bring our fire departments up to full strength. Fervent hope will be found no more effective in strengthening the fire service than it will prove in keeping war away."

Sectional Committee on Disaster Emergencies

I. H. Case, Vice-Pres. and Gen'l Mgr., FIRE ENGINEERING, New York, reported

Some Popular Figures at the Spokane Meeting

Left to right—left, Chief Michael Dunphy of Sacramento, Cal., with his daughter Marie, and Chief Chas. J. Brennan of San Francisco. Center, Chief William Payne of Spokane, affable convention host, who was enthusiastically applauded for the splendid manner in which the visitors were handled. Right, Chief Earl Traeger of Minneapolis with his Master Mechanic S. J. Sande and Mrs. Sande.

There Were Happy Faces Aplenty at Spokane

Left to right—left, Chief Dan Tierney of Arlington, Mass., newly elected I. A. F. C. Secretary-Treasurer, with Chief Sam Pope of Boston, next year's Convention host. Center, Chief George Miller, Miss Amy Ford, Mrs. Miller and Miss Sarah Martin, all of Crescent City, Fla., with Clem Smith, of Indianapolis, Indiana State Fire Marshal. Right, Chief Roy Mottesheard, Dearborn, Mich., Secty. Great Lakes Section.

for the Sectional Committee on Disaster Emergencies, of which Fire Commissioner John J. McElligott of New York City is Chairman. The report of this committee is based largely on New York city and involves a disaster plan for the city of New York. It has been prepared, however, in such a way that it should serve as guidance for almost any other large city laying out a plan to fit local requirements. Under New York's plan, a Disaster Board has been formed which functions under its Chairman, the Mayor of the City of New York. The members of this board are those heads of the City departments whose work covers the following subjects: 1. Water Supply and Power; 2. Law Enforcement; 3. Transportation; 4. Communication; 5. Health and Hospitals; 6. Public Welfare; 7. Fire and Emergencies; 8. Sanitation; and 9. Food. Copies of the report of the committee, of which Mr. Case was one of the original members, were furnished to the delegates present at the meeting.

Protection of Lumber and Wood Products Plants During War

A symposium on this subject was led by Chief W. Fitzgerald of Seattle, Washington. Chief Fitzgerald first pointed out that there are in this country 7,647 establishments engaged in the lumber business. The annual value of lumber products is $848,481,000 and the number of employees, 323,928. In view of the importance of lumber and wood products in national defense, it is essential that the problem of protecting the industry against sabotage and fire be given full consideration. After viewing the causes of increased loss in lumber industries during the war, Chief Fitzgerald offered suggestions for the protection of the industry.

Chief McAlpine of Oklahoma City, Chief Peter Kiernan of Newark, Chief E. J. Treese, Raymond, Wash., Chief D. W. Brosnan, Albany, Ga., and A. Holst, East Greenwich, R. I., and Chief Frank W. Bender, Jr., Saginaw, Mich., participated in discussion of this topic.

Protection of Meat Packing Industries During War

An introduction to this symposium, prepared by Chief Arthur W. Olsen, Omaha, Nebraska, was read by Pres. Tiller in Chief Olsen's absence. "It would seem to me that in event of war, the packing plant would be subjected to two special problems, both directly concerning fire chiefs," stated Chief Olsen, "first, the danger of sabotage, which usually means fire and explosion; and second, the increased hazards and tendencies towards carelessness sometimes brought about in plants working at high speed under pressure of wartime orders."

Some of the subjects offered for discussion by Chief Olsen included: 1. "What plant management should do to check employees, their habits and war sympathies." 2. "Examination of incoming shipments." 3. "Plant police and guards." 4. "Damage to standpipes, hose and extinguishers." 5. "Tampering with sprinkler systems and valves." 6. "Interference with private alarm and watchman systems."

Fire and Life Hazards in Connection With War Munitions in Storage and in Transit

Major C. N. S. Ballou, 4th Infantry, Fort George Wright, Washington, presented a very comprehensive review of hazards of war munitions in storage and in transit. "In general," he said, "it can be said of munitions fires that fire fighting methods intended to save the actually burning munitions are non-existent. The fires usually result in tremendous explosions within a matter of seconds or even less after ignition and in the case where explosion does not occur, the burning is extremely rapid and productive of a tremendous amount of heat. The problem of explosives in transit and storage is, then, the problem of fire prevention. As a fire hazard, common, ordinary black powder, classed as a low explosive, is by far the worse material with which we have to deal. Basically it is the same material that has been used for hundreds of years, since some forgotten experimenter first discovered the destructive possibilities resident in a mechanical mixture of sulphur, charcoal and saltpeter

"Refinements in manufacture have been developed, some uniformity in stability and behavior has been attained, but it is still black powder. This powder is classed as one of the most dangerous of all explosives to handle because it is so easily ignited by heat, friction or sparks.

Black Powder

"Black powder is a low explosive and a tough one. Suppose we now consider the high explosive. Every Fire Chief knows how to handle dynamite and it need not be touched upon since it does not enter particularly into the subject of military munitions. High explosives are T.N.T., Explosive D, and amatol.

"T.N.T. looks much like pale brown sugar. It is chemically very stable, can be safely stored in contact with metal and has no affinity for water. It is not

Men Who Were Pretty Much in the Picture at the I. A. F. C. Conference

Left to right—left, Fred Beardslee, Sales Mgr., Fire Engine Div., of Mack Trucks, New York; Chief Al Herring, Murphysboro, Ill.; Ray Cornwall, Mgr., Fire Apparatus Div., Kerotest Co., Pittsburgh, Pa., and Joe C. Ringers, Sales Mgr., Fabric Fire Hose Co., Sandy Hook, Conn. Center, Chief W. J. Cawker, Topeka, Kans., who served as Chairman of the Exhibit Committee, and also made an important report as head of the Committee on Radio Wave Lengths. Right, three of the large group of New Jersey regulars who rarely miss a convention—Chief Charles Friedel, of Union City, Chief Al Chamberlain of Hillside, and Ex-Chief Geo. Mitchell of East Orange.

at all sensitive to ordinary shocks although it can be detonated by very severe impact between hard metal surfaces. On ignition it burns much like celluloid, although in large quantities, that is of several tons, the tremendous

One of the outstanding features of the Spokane Convention was a visit to Grand Coulee Dam, largest project of its kind in the world. Top, general view of dam under construction; center, luncheon at the dam, provided by Chief Payne; below, the party, in specially conducted groups, are shown the construction equipment in operation.

heat generated may lead to detonation. It is readily detonated by fulminate of mercury, teryl, and other similar high explosives. Any confinement adds to its violence of detonation. T.N.T. in blocks or in loaded shell can be shipped, handled and stored with comparative safety.

"Amatol has much the same general characteristics as T.N.T. and is a mechanical mixture of ammonium nitrate and T.N.T. It is slightly more sensitive to shock and will usually detonate if penetrated by a rifle bullet.

"Explosive D is ammonium picrate and of all the high explosives is the most insensitive to shock. It is a yellow powder and is often loaded into shells by pounding with a heavy maul and plunger until the powder is compacted into a solid mass. It has little tendency to react with metals and burns very much like tar or resin when ignited in open air. It is extremely difficult to detonate. Explosive D can be safely stored up to amounts of half a million pounds to a single building and is not in the least dangerous when loaded into a shell unless it becomes involved in a very great conflagration.

"Smokeless powder is a nitrocellulose and is very similar in many ways to ordinary celluloid. Some smokeless powders, such as the common ballistite used in shotgun shells, is made with a nitroglycerine base. Unconfined smokeless powder burns like celluloid with little ash or smoke. When confined, the rate of burning increases in proportion to the rise in temperature and pressure. Very high temperatures are reached and combating a smokeless powder fire is a problem of preventing the spread to other things rather than a problem of extinguishing the fire."

Major Ballou reviewed the rules of safe storage of explosives and described quite fully the various types of incendiary bombs and the results produced by them. Sabotage, too, was discussed by the Major.

Protection of Grain and Food Products

Chief Earl A. Traeger, Minneapolis, Minnesota, gave a comprehensive outline of the steps necessary to protect food products, particularly those manufactured from grain, during periods of emergencies. Inspection of premises was considered quite important in keeping fire losses down. Employment of capable watchmen was also set forth as an essential fire prevention step. Illumination of outlying elevators and flour mills was pointed out as essential in keeping trespassers and unwanted visitors from the plant at night.

With reference to inspection to the grain elevators, Chief Traeger held that such inspection should include the following: The personal qualifications of the man in charge of the elevator; his experience, his habits, his ability, his reputation in the community, and his fire record. Outside premises must have a fire break, the sod should be stripped at least six feet around the elevator, office and engine room, additions and coal sheds, and all accumulations of weeds, rubbish and litter removed from under driveway.

All windows must be screened with one-quarter inch wire mesh screening. All doors must be fitted with locks and kept securely locked when the premises are not in operation.

All buildings must be boarded underneath. Exposed buildings, which create a hazard, should be carefully inspected, and if serious, promptly reported for correction. Outside protection, such as hydrants, chemicals, and fire department, and sufficient hose to reach elevator, should be provided.

Under scale dump, see that chaff and litter do not accumulate.

Cleaning machinery is generally located on working floor of elevator and all screenings and chaff must be removed from around machines. Chief Traeger also reviewed the steps necessary to guard a plant against sabotage.

Checking Wartime Sabotage

In discussing this subject, Captain William A. Groce, Special Agent, National Board of Fire Underwriters, pointed out that sabotage can be placed in three classifications: that of wrecking machinery of various types, that of wrecking human beings, and that of wrecking property by fire. Sabotage by fire is the subject that is of greatest concern to the Fire Department. In guarding vital industries against sabotage, Fire Departments should make sure of water supplies, access to premises at all times, identification and pass systems, should be sure of adequate supplies to control the type of fire likely to result from the known forms of incendiary bombs. Captain Groce reviewed some of agents used in starting incendiary fires, and described the action of phosphorus in particular.

The gasoline bombs commonly employed were described in detail.

In concluding his remarks, Captain Groce urged that each fire chief should contact the nearest F.B.I. office, and signify his intention of working with that Bureau in the control of sabotage so far as fire is concerned. The assistance of the F.B.I. can be secured by any fire department where such assistance is warranted.

Changes in Association Organization

At this point of the meeting, Chief Art J. Baker, Lewistown, Montana, acting for the Board of Directors, presented a resolution offered by the Board asking for approval of the Conference on the establishment of the position of Managing Director and also recommending that the office be continued.

Upon vote by the membership, the conference ratified the action of the Board and ordered the continuance of the office of Managing Director.

The Conference also by unanimous vote approved the transferring of the duties of the Educational Committee to the Board of Directors.

Another change recommended by the Board, which was approved by the Conference, was that the First Vice-President and the Second Vice-President be designated as sole representatives on the Board of Directors from their respective districts, and the expenses thereof in connection with attending duly called directors' meetings, with the exception of directors' meetings held in connection with the annual conferences, be paid by the International Association of Fire Chiefs.

New Sectional Groups

Chief Ralph J. Scott, Managing Director of the Association presented information on the sectional group that has been formed. In the section on Firemen Training an opportunity is presented for the personnel charged with the responsibility of fire service training to meet on a common ground of interest, to exchange their ideas and experiences, and on the basis of their accumulated experiences, to develop training programs along a systematic plan for reaching the ultimate training objective.

The Section on Fire Alarm Superintendents was formed to enable the specialists in this field to meet on common ground and deliberate on problems of fire alarm signaling. The officers of the various municipal signaling associations have offered their full cooperation.

The Section on State Fire Marshals was formed to enable this group of men

to work more closely with heads of fire departments who have a common goal.

Master Mechanics division, although still in the formative stage, was designed to bring together the mechanical men in the fire service to enable the field to solve many problems which are constantly arising in regard to fire apparatus design and performance.

Discussing Chief Scott's paper, Clem Smith, State Fire Marshal of Indiana, expressed approval of the step the Association had taken in forming a Fire Marshal Section. He also pointed out many methods in which the Fire Marshals and Fire Chiefs can cooperate to bring about more efficient work in fire prevention and fire protection.

Ed. Rumsey, Supt. of Machinery, Detroit, Mich., stated that he believed there is a big place in the International Association for a section on the Master Mechanics.

"In the matter of specifications," said Mr. Rumsey, "and the many things you fire chiefs have to deal with, I am sure your master mechanic is well versed. By coming to the Conventions and discussing the various problems, it will be of mutual help to the chiefs and master mechanics."

In Chief Scott's address, suggestion was made that the name of the International Association of Fire Chiefs be changed to the American Association of Fire Chiefs. The reason for the change is the tendency on the part of the federal agencies to refuse to cooperate with organizations of an international nature. Because of this condition, Chief Scott suggested the change of name as indicated previously. A motion was made that the changing of the name of the Association be referred to the Resolutions Committee, which was done. The matter was left for action by the Board of Directors at the 1941 annual meeting.

Enclosed Fire Apparatus

A lengthy discussion was brought forth by the round table topic on merits of fully enclosed and partially enclosed fire apparatus.

Chief Roscoe A. Foster, Navy Yard, Portsmouth, Va., stated that he had had long years of experience with the open apparatus, and that he had found the new closed apparatus a blessing to the fire service, not only in protecting the men, but also in protecting hose and other equipment.

Chief R. E. Mottesheard, Dearborn, Mich., reported his experience with two pieces of enclosed apparatus at Dearborn. His men and officers are highly pleased with them.

Ed. Rumsey, Supt. Machinery, Detroit, Mich., favored the fully enclosed piece of apparatus over the cab type. "With the cab type of engine," said Mr. Rumsey, "where your men are riding forward, you have to stop your engine in front of the fire and let your men get out in order to stretch the hose. This you do not have to do with the sedan type of engine."

Chief Tiller, Waterloo, Iowa, reported experience with the cab type, and was much impressed by them.

Chief John H. Alderson, Los Angeles, Cal., has also used the cab type but could not compare the cab type with the fully enclosed, although "thus far the cab type has proven satisfactory, the men like it very much, and in all probability we will continue to purchase that type of equipment."

Chief Frank W. Bender, Jr., Saginaw, Michigan, stated, "Last fall, from October 1 to March 1, a period of approximately six months, an engine company with a canopy cab, with the aisle down the center where the men can make the rear end and get ready to step off at the hydrant without opening doors, the engine ran without a single day's lost time, as compared with thirty-seven lost days for the same period the year preceding."

Chief William J. Cawker, Topeka, Kan., enthusiastically endorsed the fully enclosed engine. "At the present time," said Chief Cawker, "fifty per cent of our apparatus is fully enclosed. The apparatus is not open in any part. The rear of the apparatus is provided with a door similar to many garage doors in use today. The door is very easily raised and very easily lowered, completely enclosing the equipment in inclement weather. As to the absence of man-power, due to sickness from riding on open apparatus, actual records in my office show that sickness has been reduced 50 per cent. In my city I don't believe there will ever be any equipment purchased from now on except fire apparatus of the fully enclosed type."

Part of the Illinois and Wisconsin Regulars at the Spokane Gathering

Need for Strengthening the Fire Service

Discussion of this round table topic was participated in by many of the members. Chief Funk, Dallas, Texas, had experienced difficulty in getting his personnel back to former strength. "A number of our cities are now operating short-handed," said Chief Funk, "and due to the conditions throughout the United States at the present time, I feel that we should do everything in our power to restore our fire departments by increasing our personnel."

Chief Thomas F. Cuff, Menlo Park, Cal., expressed the belief that "the best plan to strengthen the department is to take the matter up with the Rating Bureau or the local Board of Fire Underwriters, and find out what credits would be received for putting on a certain number of men or a certain number of pieces of apparatus, or whatever other improvements may be deemed necessary. In the Menlo Park Fire District, eight years ago, when I went down there, the insurance rate was $1.20. Through the efforts of the Fire Commissioners, we got three reductions in five years in the residential, we got five reductions in five years in the business section, and a saving of nearly $100,000 a year to that community in their fire insurance rates, so we had no trouble in selling the improvements that were necessary in that community.

"Two years ago, I was sent up to Lewistown, Idaho, to reorganize the fire department there. I drew up a plan showing the expense of improvements that they would have to put in effect in that particular city, and the expense amounted to in the neighborhood of $68,000. In the first year that I was there, we received two reductions in our insurance rates. Shortly after I left, they received another reduction in their insurance rate. The saving amounted to nearly $150,000 in their insurance."

Chief Fred P. Higgins, Grand Rapids, Mich., described his experience in that city subsequent to the 15 mill tax limitation legislation which was put on the statute books. Several years ago the fire department had 270 men, and twelve stations. Today there are only 215 men and eleven stations. The station that was eliminated, due to the lack of revenue, after other organizations had gotten what they were after, was a station that was in the recognized conflagration area of the city.

Chief L. P. Barnum, Phoenix, Ariz., suggested that the Association condemn, by resolution, the use of apparatus over twenty-five years of age. He also suggested that the Association recommend to city officials that fire departments be restored to their former strength.

Protection of the Petroleum Industries

The round table on, "Are we doing anything to strengthen the fire protection of the petroleum industries and to guard against heavy losses therein?" was discussed by George F. Prussing, Safety Engineer, Union Oil Company, Los Angeles, Cal. Mr. Prussing informed the members that the American Petroleum Institute has already set up machinery to deal with this particular problem.

Chief G. R. McAlpine, Oklahoma City, Okla, described his experiences in dealing with the oil industries in his city. There are over 1,000 producing wells within the limits of Oklahoma City and the fire department checked the major company's pumping station that lay right outside the city limits and which pumps oil to all parts of the country. The department found that there were stations pumping 45,000 barrels a day with a storage of 163,000 barrels in one instance. He made recommendations for improvements for fire protection in the industry and the oil companies gave hearty cooperation.

This round table topic was discussed from many angles. Chief R. E. Mottesheard, Dearborn, Mich., described the experiences in Detroit where a depart-

Delegates of the International Association of Fire Ch[illegible]ed in F

ment store was involved by serious fire due to the air-conditioning system. The Michigan chiefs had been working with the rating bureau there on regulations to protect buildings equipped with air conditioning systems. A number of automatic devices have been tested out, which have proven their value, such as automatic switches to shut off the fans and photo-electric eyes.

Chief Dowling, Jacksonville, Fla., told of the system employed there to check fires in air-conditioning systems. The supervisor of buildings, when he grants a permit for air conditioning systems, insists that automatic shutters with fusible links be placed in all the ducts. So far no fire has occurred, so that the effectiveness of the device has not been proven as yet.

Chief Ross Davis, Philadelphia, Pa., called attention to the fact that steel wool used in the installation of air conditioning systems is not fireproof as commonly believed.

The accumulation of dust and oil on the wool makes the wool combustible.

Ladder Materials

Hugh Walker, Engineer of the American La France-Foamite Corporation, Elmira, New York, gave an illustrated talk on fire department ladder materials and he described the requirements of wood used for ladders and the great care needed to make sure that stock employed for ladders is free from imperfections.

He also outlined fully characteristics of steel and duralumin ladders, and told about the effects of heat thereon.

Final Business

Chief William J. Cawker of Topeka, Kan.,, Chairman of the Committee on Exhibits, reported that there were sixteen exhibitors, and the total receipts were $790.

Resolutions were presented by Chief Pope as follows:

"The Sixty-Eighth Annual Conference of the International Association of Fire Chiefs in assembly at Spokane, Washington, August 5 to 8, 1940, realizing the important role and grave responsibilities being placed upon the shoulders of the Fire Chiefs in doing their part under the national defense program; and

"Whereas, the strengthening of the line of defense against our common enemy, fire, which is a menace to our property in time of peace and which would add immeasurably to the horrors of war should this country become involved therein, is so vitally important; and

"Whereas, the many cases of sabotage, incendiarism and destruction of essential properties by fire is interfering with the progress of the national defense program; and

"Whereas, it is a well known fact that practically all of the existing manpower, fire fighting equipment and signalling systems of the fire departments of the country are woefully inadequate; and

"Whereas, it is essential in order that the fire departments be able to render full service that steps be taken to bring the manpower, fire fighting equipment and signalling systems up to full strength, and that they be modernized and extended to meet present day requirements or any emergency, now therefore be it

"Resolved, that it is imperative for the protection of life and property as part of the national defense program that this organization go on record strongly urging the adoption of the necessary means to put into immediate effect, the building up and extending of the manpower, fire fighting equipment and signalling systems of all fire departments; and be it further

"Resolved, that a copy of these resolutions be sent to the muicipal officials throughout the country who are responsible for the providing of funds and the carrying out of these measures."

The resolution was presented and carried unanimously.

Chief William J. Cawker, Topeka, Kan., who was Chairman of the Committee on Radio Wave Lengths, reported the work of his committee in contacting senators and representatives, and the results therefrom.

The gist of these lengthy communications was that the available channels were too few in number to grant fire departments separate channels, unless operated in connection with the police department. The exception was where a fire department maintained fire boats on marine waters.

By vote of delegates assembled, the committee was continued, and the Managing Director was directed to carry the matter forward by personal interview with the President of the United States, if such action be necessary; further, that he be assisted in this matter by the Chairman of the Radio Committee.

Apparatus May Be Commandeered

Chief Roscoe A. Foster, Navy Yard, Portsmouth, Va., pointed out the United States Army is now making a survey of all of the fire apparatus builders, of how many pieces of apparatus are being built on their floors and the capacities thereof. Because the army is building encampments, Chief Foster felt the survey was for the purpose of enabling the Army to learn where it could secure apparatus without delay and expressed the belief that apparatus in the plants undergoing construction for municipalites might be commandeered.

After considerable discussion upon fire protection of naval and other military establishments, Chief Charles J. Brennan of San Francisco, made the suggestion that the Managing Director be instructed to see that proper authorities are contacted to the end that sufficient funds be allocated for the general municipal protection of this nation for the duration of the war abroad.

"It is a recognized fact," said Chief Brennan, "that municipalities of themselves cannot meet the expense of a properly arranged program of emergency defense, and that following the practice established in England, the amount of money allocated to each community should not be less than fifty per cent of the cost of such a program.

By vote of the conference, the Managing Director was instructed to take this matter up with the authorities in Washington.

Election of Officers

By unanimous vote, Chief W. H. Palmer, Charlotte, N. C., and First Vice-President of the International Association of Fire Chiefs, was advanced to the presidency.

Chief W. R. Williams, Fresno, Cal., and Second Vice-President, was elected First Vice-President.

Chief Andrew Callahan, of Harrison, N. J., was unanimously elected Second Vice-President, after Chief Art J. Baker, of Lewistown, Mont.; Chief W. P. Payne, of Spokane, Wash.; and Chief

Fire Chiefs Assembled in Front of the Hotel Davenport, Spokane, Wash.

Ed Welch, of Columbus, Ohio, who also were nominated, had withdrawn in his favor.

Due to the resignation of Chief James J. Mulcahey as Secretary-Treasurer after twenty years of loyal service to the Association, it was necessary to fill the position so vacated. This honor went to Chief Daniel B. Tierney of Arlington, Mass., former President of the Association, who was elected unanimously to the position.

Chief Jay W. Stevens was reappointed Executive Secretary by the incoming President.

The invitation of Chief Samuel J. Pope to the Association to hold its 1941 Convention in Boston was accepted by unanimous vote. That meeting, it is believed, will be a joint meeting between the Internatioinal Association of Fire Chiefs and the New England Association of Fire Chiefs, and should bring out a record breaking attendance.

Convention Notes

"The Gamewell Night," a party staged by V. C. Stanley, President of The Gamewell Co. on Tuesday evening proved one of the high spots of the Convention. A beautifully arranged buffet table was loaded with attractive refreshments, done up to the usually high standard of the Gamewell Co. These "Gamewell Nights" are becoming a highly popular feature of the Annual Conferences of the International Association of Fire Chiefs.

* * *

The delegates were deeply shocked to learn on Monday morning of the death of Chief Gideon Dean, Orlando, Fla., who passed away at St. Lukes Hospital, Spokane. Chief Dean became ill shortly after arriving at Spokane on Sunday. He was rushed to the hospital where he was found to be suffering from bronchial pneumonia. He died shortly before noon Monday. The Association shipped his body back to his home at Orlando, Fla.

* * *

During the Conference, announcement was made of the death of former Chief George Wallace of Cleveland, Ohio. His death occurred at the time the Association was making preparations to open the Conference. Chief Wallace was ninety-two years old and had been ill for the past four or five years. He was for years a member of the International Association of Fire Chiefs and attended its conferences regularly.

* * *

Mrs. Calvin Johnson, wife of Chief Johnson of Knoxville, Tenn., was stricken while visiting the Yellowstone National Park on her way to the convention. It was necessary that she be rushed to the mammoth Hot Springs Hospital, where she remained for about a week, after which she was removed to her home in Knoxville. Latest reports indicate that she is progressing nicely.

* * *

Chief Charles Brennan showed the conference the beautiful plaque which was presented by the fire chiefs of California to Jay W. Stevens. There are some one hundred odd miniature fire department badges from the various cities represented affixed to the main section of the plaque itself. In addition, the plaque bore the following inscription: "Presented to Jay W. Stevens in appreciation of his life-long devotion to the fire service and as a token of our esteem."

* * *

William H. Meade, Supt. Fire Alarm System, Everett, Wash., showed interesting color films of the work of the fire alarm service at Everett. The film was designed to bring to the public an appreciation of the work done by their fire alarm system and fire department. Mr. Meade reported very satisfactory results from showing this film throughout the city.

* * *

The conference marked the retirement of Chief James J. Mulcahey, Secy.-Treas. of the Association, and who has been one of its most loyal officers. Chief Mulcahey recently celebrated his eighty-third birthday, and felt that he was entitled to relief from the arduous work which has been imposed upon him in recent years. With the reorganization of the Association in 1931, Chief Mulcahey then paid secretary, was re-elected to the position and has served since that time without compensation of any kind. For twenty years he has held the position of secretary.

* * *

Chief Hugo R. Delfs, Lansing, Mich., past President of the International Association of Fire Chiefs, was signally honored at the Convention in being made an honorary life member. Chief Delfs retires from the fire service of Lansing, on Feb. 1, 1941, after serving the fire department for fifty years, of which thirty-seven years were as chief. Chief Donald Post of Ferndale, Michigan, who recently retired as Chief of the Dept., was also unanimously voted honorary life membership.

* * *

Chief William T. Payne, Spokane, Wash., host of the Convention, did a magnificent job in taking care of his guests. The entertainment he provided the visitors deserves high praise. Even though the registration of the conference was a little below that of the previous ones, possibly due to the fact that it was held in the far western part of the country two years in succession, the conference must be classed as one of the finest ever held by the Association. With regard to Chief Payne's work, it must be said that no detail was overlooked and that the conference went through without a hitch of any kind.

* * *

In appreciation of his work as president of the Association, Chief Ray Tiller was presented by the Association with a beautiful diamond studded ring, bearing the emblem of the Association.

* * *

Mrs. Ray Tiller, wife of the retiring president, did yeoman service at the registration desk. Although she was called in temporarily to lend a hand, she found herself in charge of activities together with Secty.-Treas. Mulcahey for the entire period of the Convention.

* * *

Mrs. William T. Payne, wife of Chief Payne, was confined to her home by illness during the week of the Convention. However, she was not forgotten. During the course of the banquet, a hook-up was provided so that she could listen to the speakers at this annual feature of the conference.

* * *

The trip to Grand Coulee Dam was a delightful outing in which practically all of the delegates and guests participated. The 200-mile trip to and from the dam gave the visitors an idea of the territory around Spokane and also gave them opportunity to view the huge dam now nearing completion across the Columbia River.

Associate Members Registered at the Convention

Agnew, Frank J., Asst. Secty., Fireman's Fund Insurance Co., San Francisco, Cal.
Ballou, Major C. N. S., Fort George Wright, Wash.
Barrett, Patrick E., Chief, Fire Prevention Bureau, Cleveland, Ohio
Barton, Fred C., Master Mechanic, Sioux City, Iowa
Beardslee, F. W., Sales Mgr., Mack Trucks, Inc., New York, N. Y.
Boatright, Edward L., Battalion Chief, Portland, Ore.
Bragg, S. C., Mack Trucks, Inc., Portland, Ore.
Braun, Paul J., Public Fire Protection Eng., Seattle, Wash.
Binford, J. O., General Manager, American-LaFrance-Foamite Corp., Elmira, N. Y.
Brown, V. H., Dist Mgr., LaFrance Fire Engine & Foamite, Ltd., Vancouver, B. C.
Brown, George F., Captain, San Francisco, Cal.
Calvert, James, Asst. Chief, Sacramento, Cal.
Canuto, R., Captain, Portland, Ore.
Carlson, M. J., Fire Inspector, Milwaukee, B. B. Company, Chicago, Ill
Cavanagh, H. G., A. D. T. Company, New York, N. Y.
Christianson, Otto, Asst. Chief, Glasgow, Mont.
Cizek, Charles, American-LaFrance-Foamite Corp., Chicago, Ill.
Cornell, Dick, Mack Trucks, Inc., Los Angeles, Cal.
Cornwall, Ray A., Manager, Kerotest Manufacturing Company, Pittsburgh, Pa.
Detich, W. H., Rep., Elkhart Brass Manufacturing Co., Elkhart, Ind.
DeSchane, E., Operating Supt., A. D. T. Company, San Francisco, Cal.
Farnsworth, Wayne, Hall-Scott Motors, Berkeley, Cal.
Fitch, James W., Seattle, Wash.
Forse, Charles, American-LaFrance-Foamite Corporation, San Francisco, Cal.
Funk, Harry, Asst Chief, Prescott, Ariz.
French, B. T. Batt. Chief, Portland, Ore.
Fricke, Frank R., Commissioner, Elizabeth, N. J.
Gallatin, Willis E., Captain, San Francisco, Cal.
Goldsmith, Clarence, Asst. Chief Eng., National Board of Fire Underwriters, Chicago, Ill.
Grace, Bob, Manager, Pioneer Rubber Company, Los Angeles, Cal.
Graves, L. B., Chief Fire Marshal, Phoenix, Ariz.
Gray, Burns, Gray Fire Apparatus Company, Lewiston, Idaho
Green, Joseph H., General Mgr., Eureka Fire Hose Company, New York, N. Y.
Groce, W. A., Special Agent, National Board of Fire Underwriters, Spokane, Wash.
Hall, Robert E., Deputy State Fire Marshal, Spokane, Wash.
Hallgren, Ed, N. W Sales Mgr., Rensselaer Valve Company, Seattle, Wash.
Harshfield, Frank, Seattle, Wash.
Hayes, Jack A., Deputy State Fire Marshal, Salem, Ore.
Millhouse, J. H., Northwest Fire Equipment Company, Seattle, Wash.
Hunt, John J., Captain, Los Angeles, Cal.
Kenley, George S., Sales Manager, American Rubber Mfg. Co., Oakland, Cal.
Kendall, Charles, Captain, Portola, Cal.
Larrabee, R. J., Field Engineer, Underwriters Laboratories, Inc., San Francisco, Cal.
Lawton, M. W., Howard Cooper Corporation, Portland, Ore.
Limberg, Axel, Asst. Chief, Murray, Utah.
Lundberg, Harold, Peter Pirsch & Sons Company, Minneapolis, Minn
MacDonald, George C., Fireman, Lindsay, Cal.
Matlock, Allen, Batalion Chief, San Francisco, Cal.
Mattingly, B. B., Battalion Chief, Nashville, Tenn.
McDonnell, Wallace A., Fire Department Photographer, St. Louis, Mo.
McGrath, William A., Ex-Asst. Chief, Oakland, Cal.
Mulligan, T., Asst. Chief, Sacramento, Cal.
Myers, Arthur, Sales Manager, Atlas Fire Equipment Co., New York, N. Y.
Nelson, Roy E., Nelson Equipment Company, Twin Falls, Idaho
Ness, Ralph B., Battalion Chief, New York, N. Y.
Oldershaw, P. J., Spokane, Wash.
Overhulse, W. B., Factory Agent, E & J Manufacturing Co., San Francisco, Cal.
Parsons, Arthur C., State Fire Marshal, Helena, Mont.
Philbrick, F. B., District Manager, The Gamewell Co., Los Angeles, Cal
Pirsch, W. R., General Manager, Peter Pirsch & Sons Co., Kenosha, Wis.
Prussing, George F., Safety Engineer, Union Oil Company, Los Angeles, Cal.
Raines, Herbert, Eng., National Board of Fire Underwriters, San Francisco, Cal.
Richards, Seth, Jr., Dept. Secty, Chamber of Commerce, Spokane, Wash.
Roney, R. D., Eureka Fire Hose Company, Spokane, Wash.
Reihm, Rex, Captain, Portola, Cal.
Ringers, Joe, Fabric Fire Hose Company, Sandy Hook, Conn.
Rumsey, E. C., Chief of Apparatus, Detroit, Mich.
Sande, S. J., Supt. of Fire Apparatus, Minneapolis, Minn.
Sanderson, H. H., Seattle, Wash.
Schleinitz, William O., President, Dayton Fire Equipment Co., Dayton, Ohio
Seth, George L., Asst. Sales Mgr., Mine Safety Appliance Corp., Pittsburgh, Pa.
Stanley, Vincent O., President, The Gamewell Co., Newton, Mass.
Smith, Clem, State Fire Marshal, Indianapolis, Ind.
Smith, E. L., Fire Marshal, Seattle, Wash.
Stauffer, Ivan, Vice-Pres., United Fire Engine Corp., Los Angeles, Cal
Stevenson, Lester, Sales Mgr., Seagrave Corp., Columbus, Ohio
Stout, O. C., Sanderson Safety Supply Co., Seattle, Wash.
Stover, Frank F., District Sales Mgr., The Gamewell Company, Chicago, Ill.
Taylor, E. A., Chief Deputy State Fire Marshal, Salem, Ore.
Thomas, David S., Eng., Board of Fire Underwriters of the Pacific, Butte, Mont.
Ufer, Herbert G., Western Superintendent, Underwriters Laboratories, Inc., Los Angeles, Cal.
Vieira, M. L., Director of Training, Sacramento, Cal.
Walker, Hubert, Chief Engineer, American-LaFrance-Foamite Corp., Elmira, N. Y.
Weed, Hal B., Pacific Coast Manager, Pyrene Manufacturing Co., San Francisco, Cal.
White, W. F., Engineer, Oregon Insurance Rating Bureau, Portland, Ore.
Wilderotter, Charles J., Fire Commissioner, Newark, N. J.
Williams, J. D., Commissioner of Safety, Everett, Wash.

Active Members Who Registered

Alderson, John H., Chief, Los Angeles, Cal.
F. D. Alvord, Chief, Glasgow, Mont.

Baker, Art J., Chief, Lewistown, Mont.
Barnum, L. B., Chief, Phoenix, Ariz.
Beckert, Ernest, Chief, West New York, N. J.
Bender, Frank W., Jr., Chief, Saginaw, Mich.
Benott, B., Chief, Petaluma, Cal.
Blackman, H. H., Chief, Elgin, Ore.
Boatright, Edward L., Portland, Ore.
Bovet, Frank A., Chief, Alhambra, Cal.
Boyd, J. C., Chief, Wallace, Idaho
Brennan, Charles J., Chief, San Francisco, Cal.
Brooks, Wm. G., Ex-Chief, Spokane, Wash.
Bronnan, D. W., Chief, Albany, Ga.
Brun, M. J., Chief, Ft. Smith, Ark.
Bryson, H. W., Chief, Wenatchee, Wash.
Byrones, F. A., Chief, Elmira, Cal.

Cackler, W. D., Chief, Hanford, Cal.
Callahan, Andrew F., Chief, Harrison, N. J.
Canfield, Lloyd B., Chief, Beverly Hills, Cal.
Canning, L. C., Chief, Midvale, Utah
Carlon, Tom, Chief, Bend, Ore.
Carmichael, Joe, Chief, Little Rock, Ark.
Carter, L. B., Chief, Carpinteria, Cal.
Case, I. H. (Honarary), New York, N. Y.
Cavanaugh, Thomas, Chief, Waterbury, Conn.
Cawker, Wm. J., Topeka, Kan.
Chamberlain, Albert. Chief, Hillside, N. J.
Chauven, Ledger L., Chief, Grosse Pointe, Mich.
Clark, Charles, Ex-Chief, Wayne, Pa.
Clay, John W., Chief, Salt Lake County, Utah
Coop, E. F., Chief, Pasadena, Cal.
Cote, A. J., Chief, Woonsocket, R. I.
Crosker, H., Chief, Newport-Balboa, Cal.
Cuff, Thomas F., Chief, Menlo Park, Cal.

Davis, Ross B., Chief, Philadelphia, Pa.
Davis, Roy R., Chief, Fullerton, Cal.
Delst, W. W., Chief, Booner's Ferry, Idaho
Delainey, C. A., Chief, Lakewood, Ohio
Delfs, Hugo R., Chief, Lansing, Mich.
Demant, D. A., Chief, Lindsay, Cal.
Dowling, W. Q., Chief, Jacksonville, Fla.
Downing, C. L., Chief, Grand Junction, Col.
Dessin, W. T., Chief, Burlingame, Cal.
Dunphy, M. J., Chief, Sacramento, Cal.
DuPaul, P. E., Chief, Vancouver, Wash.

Eichelberger, John S., Chief, Berkeley, Cal.
Elliott, Roy, Chief, Medford, Ore.
Engler, George A., Chief, S. Dakota
Enright, G. H., Chief, Montecito, Cal.
Ertale, Frank J., Chief, Jersey City, N. J.

Felder, Louis E., Chief, Istrouma, La.
Ferris, Herbert, Chief, Greenfield, Mass.
Finley, Thomas J., Chief, East Chicago, Ind.
Fisher, John A., Chief, Duluth, Mass.
Fitzgerald, Wm., Chief, Seattle, Wash.
Foster, Roscoe A., Chief, Navy Yard, Portsmouth, Va.
Friedel, Charles, Chief, Union City, N. J.
Fulkerson, Boise, Chief, Norman, Okla.
Funk, L. M., Chief, Dallas, Tex.

Gill, D. B., Chief, Lewiston, Idaho
Ginther, C. E., Chief, Rochester, Minn.
Girard, A. A., Chief, Pocatello, Idaho
Goodin, G. A., Chief, Muskogee, Okla.
Gordon, T. H., Chief, Great Falls, Mont.
Grenfell, Edward, Chief, Portland, Ore.
Griswold, J. C., Chief, Kings, Co., Hanford, Cal.

Hall, Ward, Chief, Alliance, Neb.
Hare, Ray H., Chief, Yakima, Wash.
Hayne, Don, Chief, Albany, Ore.
Herring, Al, Chief, Murphysboro, Ill.
Haley, Ed., Ex-Chief, San Jose, Cal.
Harris, M. S., Chief, Chelan, Wash.
Hazeman, George W., Chief, Woodland, Cal.
Herniger, Howard, Chief, Rio Vesta, Cal.
Higgins, Fred P., Chief, Grand Rapids, Mich.
Hirschey, C. M., Chief, Hillsborough, Cal.
Hogan, Harry J., Chief, Great Falls, Mont.
Hogan, Joe G., Chief, Bayonne, N. J.
Hoist, Anne C. Allen, Chief, Cedar Hill F. D., East Greenwich R. I.
McHugh, E. A., Chief, Louisville, Ky.
Hunt, Carl, Chief, Sioux Falls, S. D.
Hutchison, Parley, Chief, LaGrande, Ore.
Huycke, O. M., Chief, Camas, Wash.

Ishunn, Harry, Chief, Fort Peck, Mont.
Jackson, W. E., Chief, El Paso, Tex.

Jarrett, Paul, Chief, Park Rose, Ore.
Johnson, Alfred, Chief, Potlatch, Idaho
Johnson, C. M., Chief, Knoxville, Tenn.
Jones, Ira T., Chief, Bellingham, Wash.

Karg, Otto F., Chief, Baker, Ore.
Keegan, James T., Chief, Salvage Corps, Newark, N. J.
Kenna, Michael, Chief, Hartford, Conn.
Kelliher, Maurice, Chief, Casper, Wyo.
Kenah, William H., Chief, Elizabeth, N. J.
Kiernan, Peter, Chief, Newark, N. J.
King, Harry A., Chief, East Cleveland, Ohio
Kraus, Harold G., Chief, Fort Bragg, Cal.
Knol, George, Chief, Cicero, Ill.
Kuehn, William G., Chief, Culow City, Cal
Kuehner, E. C., Chief, Chehalis, Wash.

Lamb, Edward, Ex-Chief, Stanford Univ. F. D., San Francisco, Cal.
Laughbon, Frank E., Chief, Davenport, Wash.
Leonard, Michael, Chief, Erie, Pa.
Leonesio, Bill, Chief, Palm Springs, Cal.
Lind, Olander, Chief, Kansas City, Kan.
Long, John C., Chief, Danville, Va.
Long, Robert, Chief, Lemoore, Cal.
Leudeke, Albert, Chief, Freeport, Ill.
Lund, C. H., Chief, Cut Bank, Mont.
Lutz, William J., Chief, Wilmington, Del.
Lyles, H. F., Chief, Houston, Texas

Martin, Fred, Chief, Butte, Mont.
Matthew, W. O., Chief, Bozeman, Mont.
Matthias, Larry, Chief, Pasco, Wash.
May, Earl, Chief, Lolie, Cal.
McAlpine, G. B., Chief, Oklahoma City, Okla.
McDiarmid, A., Chief, Vancouver, B. C.
McDonald, L. J., Chief, Jackson, Miss.
McGuire, Robert, Chief, Gary, Ind.
McHugh, E. A., Chief, Louisville, Ky.
Meany, Bernard A., Chief, Ottumwa, Iowa
Melander, C. E., Chief, Pullman, Wash.
Miller, George C., Chief, Crescent City, Fla.
Miller, Harry E., Chief, Lancaster, Pa.
Michell, George L., Ex-Chief, East Orange, N. J
Morris, Hugh, Chief, San Mateo
Morris, L. R., Chief, Ames, Iowa
Mottesheard, R. E., Chief, Dearborn, Mich.
Muicahey, James J., Ex-Chief, Yonkers, N. Y.
Munroe, A., Chief, Victoria, B. C., Can.

Noonan, D. J., Ex-Chief, Vallejo, Cal.
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Presley, Oliver B., Ex-Chief, Long Branch, N. J.
Pritchard, Norman C., Chief, Ferndale, Mich.
Privat, Fernand, Chief, Rayne, La.
Putnam, H. G., Chief, Winona, Minn.

Quane, Henry, Chief, Anamonda, Mont.
Quinn, A. L., Chief, Missoula, Mont.

Rapp, C. W., Chief, Logan, Utah
Ripley, J. T., Chief, Albany, Cal.
Ripley, H. F., Chief, Orofino, Idaho
Robinson, George R., Chief, Yuma, Ariz.
Ross, L. K., Chief, Potlatch Forest, Inc., Lewiston, Idaho

Saunders, W. A., Chief, Ashland, Wis.
Schmidt, A. G., Chief, Rock Island, Ill.
Scott, B. J., Ex-Chief, Los Angeles, Cal.
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(*Continued on page 479*)

Ladies Present Assembled for Their Group Photograph

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...that this plant burned

When fire broke out, the sprinkler equipment functioned perfectly...

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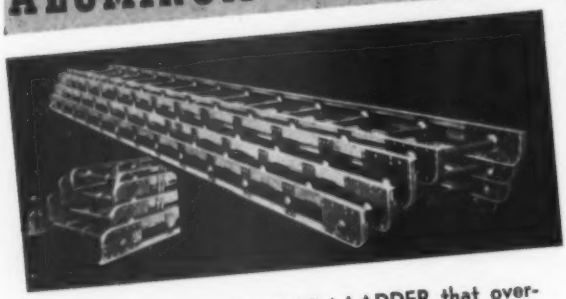

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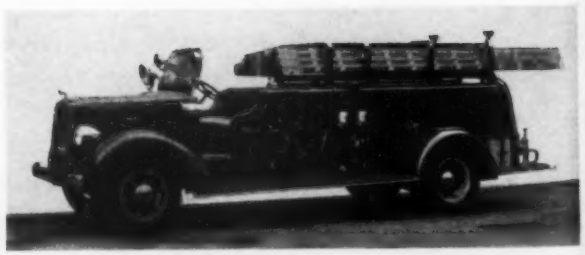

TESTED AND APPROVED UNDER ACTUAL USE

Above illustration shows Aluminum Four Section Ladder installed on new Monroe, Wash., truck. Chief Skillen, of that city, writes, "At first I was skeptical of the 45' aluminum ladders without side poles, but having used them I wouldn't have a wooden ladder on my trucks." (Photo courtesy Mack International Motor Truck Corp.)

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Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Hazards, Etc.

To the Editor:

1. Assume two lines of three-inch hose, each 1,000 feet long, stretched to a siamese connection at the base of a water tower, which is fully extended to a height of 65 feet; the size of tip used at the top of the four-inch standpipe of the tower is 1½-inch and it is supplied from a high pressure hydrant under 200 pounds hydrant pressure. It is desired to increase the discharge, so a third line equal in length to the other two is laid to the siamese connection, but using the same nozzle. What will be gained?

2. What are some of the principal hazards attending the manufacture of electric appliances?

3. With regard to the successful use of foam extinguishers and systems on fires in oil and on electric fires, what is your opinion of the value of foam on fires in oil-cooled electric transformers and on fires in film storage vaults. Please state what types and sizes of nozzles you would advocate in each case and at what pressure you would operate the devices in service?

4. Under what conditions or circumstances do you believe that so-called "heavy streams" are advisable inside of buildings. What devices are most commonly used in providing such streams, also what are the facilities for their control and what is the necessary source of water supply?

D. F. M.

Answer: 1. To find the effect of adding a third line supplying a water tower, it is necessary to solve first for nozzle pressure when two lines are employed, and then solve the problem when three lines are in use. The difference shows the increase in nozzle pressure due to the addition of a third line.

Before solving for nozzle pressure, friction loss in the water tower and back pressure in the water tower, extended sixty-five feet, must be deducted from the hydrant pressure.

Friction loss for the standpipe is taken at fifteen pounds.

The back-pressure $= 65 \times .434 = 28.2$

Correct engine pressure then $= 200 - 15 - 28.2$ pounds or 156.8 pounds.

Nozzle pressure = Engine pressure ÷ (1.1 + KL).

K, for two parallel lines of three-inch hose, and one 1½-inch nozzle = .051.

$L = 1000 \div 50 = 20$.

Nozzle pressure
$= 156.8 \div (1.1 + 0.051 \times 20)$
$= 156.8 \div 2.12$
$= 74$ pounds, approximately.

Now, if a third line is added, K becomes .0238 (for three parallel lines of three-inch hose, and one 1½-inch nozzle.)

Nozzle pressure
$= 156.8 \div (1.1 + 0.238 \times 20)$
$= 156.8 \div 1.576$
$= 99.5$ pounds.

Thus the nozzle pressure is increased 25.5 pounds by adding a third parallel line of three-inch hose.

Incidentally, the values of K for three parallel three-inch lines of hose may be found by dividing the value of K for one three-inch line by 8.07. From the above, the following table is offered:

Nozzle Diameter	K for One 3-inch Line	K for Three Parallel Three-inch Lines of Hose
1¼ inch	.092	.0114
1⅜ "	.137	.017
1½ "	.192	.0328
1⅝ "	.266	.033
1¾ "	.351	.0435
2 "	.605	.075

2. The hazards attending the manufacture of electrical appliances are myriad in number. It would be impracticable in the limited space of the journal, to list even the more important ones.

When it is recalled that fabrics, rubber, lacquers, inflammable solubles, are all employed in the manufacture of electrical appliances, together with such hazardous operations as soldering, glass blowing and molding, welding, etc., it will be appreciated that the fire hazards are of tremendous number. Unless a specific appliance is named, only a general answer can be given to the question.

The principal hazards might be listed as follows: Electrical testing; soldering; lacquering brazing and welding; annealing and tempering; baking; and irregular use of electric current might be referred to as a typical hazard.

2. Foam can be used with good effects on fires in electrical transformers, provided the current is cut off before the application of the foam. It must be remembered, however, that foam contains moisture, and moisture applied to the oil in a transformer may make it unfit for subsequent use. Carbon dioxide is more commonly employed as an extinguishing agent for fires in transformers and it is highly effective as it does not do water damage to the apparatus. Further, it is a non-conductor of electricity, and even though the transformer current has not been turned off, the carbon dioxide can be used with safety.

As to fires in film storage vaults, water is about the best extinguishing agent. Water, delivered in a fine spray, absorbs toxic gases which may be thrown off by decomposition of the celluloid, and at the same time extinguishes the fire.

4. Heavy streams are advisable inside of buildings only where large areas are involved by fire and large quantities of combustible materials are involved. Ordinarily, heavy streams are not used within buildings, except where they are directed out of the building on fires in adjacent structures or covering exposures.

Any of the portable type holders may be employed for operating the stream, and the standpipe situated in the building will usually provide the necessary quantity of water. In the event that the standpipe is incapable of providing enough water for large streams as well as other lines, then the lines must be stretched up through the stairway, up fire escapes, or up the face of the building.

Engine Pressures in Relay Line

To the Editor:

Should the hydrant pressure be added to, or deducted from, the engine pressure? For example, the engines are in relay. The first pumper is connected to a hydrant at which there is forty pounds and pumps through a line of 3-inch hose, 1,200 feet long, to a second pumper, which pumps through a line of 2½-inch hose, 900 feet long, to a 1⅛- inch nozzle with 36 pounds nozzle pressure.

What is the pressure at discharge of first pumper? What is the pressure at discharge of second pumper? What is the G. P. M. from each of the pumpers? Also, what should be the approximate pressure to be delivered to the second pumper?

Some of the members of the company think that, in the case of the first pumper, it is necessary to first find the friction loss in the line between the first and second pumpers, then add the hydrant pressure to this, or pass it along to the second pumper. For example, the friction loss was found to be 60 pounds in line between the first and second engines, plus 40 pounds hydrant pressure, making a dicharge pressure of 100 pounds at discharge of first pumper. From study material that I have read, I am of the opinion that pumpers are tested for acceptance at draughting water. Therefore, the hydrant pressure would assist the pumper, and in the above problem, it would be only necessary to have a pump pressure to

overcome the friction in line, and at least 5 pounds for the second pumper; 60 pounds friction loss, plus 5 pounds, or 65 pounds at discharge of first pumper.

Would it be correct to deduct the pressures at each of the pumpers when you want to find the pressure at which each pumper is pumping, say from the first pumper, deduct the hydrant pressure; and from the second pumper, deduct the pressure at which the water enters the second pumper?

Answer: First, find the discharge, 1⅛" nozzle at 36 pounds. The formula used for this purpose is:

Discharge $29.7 \times d \times \sqrt{p}$, where d is the nozzle diameter, and p, the nozzle pressure in pounds per square inch.

The discharge solves out to be 224 gallons per minute.

Next, find the pressure at engine No. 2, which is supplying the lead line with the 1⅛-inch nozzle.

Engine Pressure
$= \text{Nozzle Pressure} \times (1.1 + KL)$
$= 36 \times (1.1 + .167 \times 18)$
$= 147.8$, or 148 pounds

This is the pressure as indicated on the gauge of the second engine.

Next find the friction loss in the line between the first and second engines.

To do this, it is desirable to first change the 3-inch hose to 2½-inch.

1,200 feet of 3-inch hose is equal to $1{,}200 \div 2.6 = 461.5$ feet of 2½-inch hose between the two engines.

Find the friction loss by formula:

Friction loss (100 feet of 2½-inch hose) $= 2 \times Q \times Q + Q$, where Q is the flow measured in hundreds of gallons per minute.

Then friction loss per 100 feet of 2½-inch hose $2 \times 2.24 \times 2.24 + 2.24 = 12.275$, or 12.3 pounds per 100 feet.

As the line between the first and second engine is equal to 461.5 feet of 2½-inch hose, the friction loss in this line would then be 4.615 x 12.3, or 56.7645 or 57 pounds.

Allow an entrance pressure to the second engine of ten pounds. Then the first engine would have to deliver a total pressure of 57 + 10, or 67 pounds.

If the hydrant is aiding the first pumper by the amount of 40 pounds, then this pumper will have to create, in itself, only 67 — 40, or 27 pounds. However, the discharge gauge on the pumper will show 67 pounds.

The discharge from the nozzle is the discharge from each pumper.

Defense Movement Started

A new movement has been started in New York state which competent Red Cross and Military authorities deem to be of the highest value in National Defense. This movement was initiated by the Rockland County Emergency and First Aid Council, Inc. This organization is interested in organizing first aid and emergency mobile equipment and squads, and ambulance corps along statewide and nationwide lines.

At the annual convention of the Firemen's Association of the State of New York which was held at Dunkirk, N. Y., the officers and program committee made a valiant attempt to bring further light to the delegates by having sectional meetings with leaders or speakers on different topics. One of the topics was First Aid. The President of the Rockland County Council gave an excellent talk on this topic which was well received among the delegates.

Any fire departments and other groups maintaining first aid units, emergency units, or similar units, particularly in New York State, are invited to contact W. P. Babcock, 218 North Midland Avenue, Nyack, N. Y.

W. H. Deitch Dies

Mr. William H. Deitch, sales representative of the Elkhart Brass Mfg. Company, Elkhart, Ind., died at his home in Elkhart on August 31 following a sudden illness. He was fifty-nine years old. He had attended the I. A. F. C. convention at Spokane and appeared to be in good health.

Mr. Deitch was born at Bristol, Ind., in 1883. For more than eleven years he was a member of the Elkhart Fire Department. Then for twenty years he was a representative for American-LaFrance Fire Engine Company. For the last four years, he has been a sales representative of the Elkhart Brass Manufacturing Company.

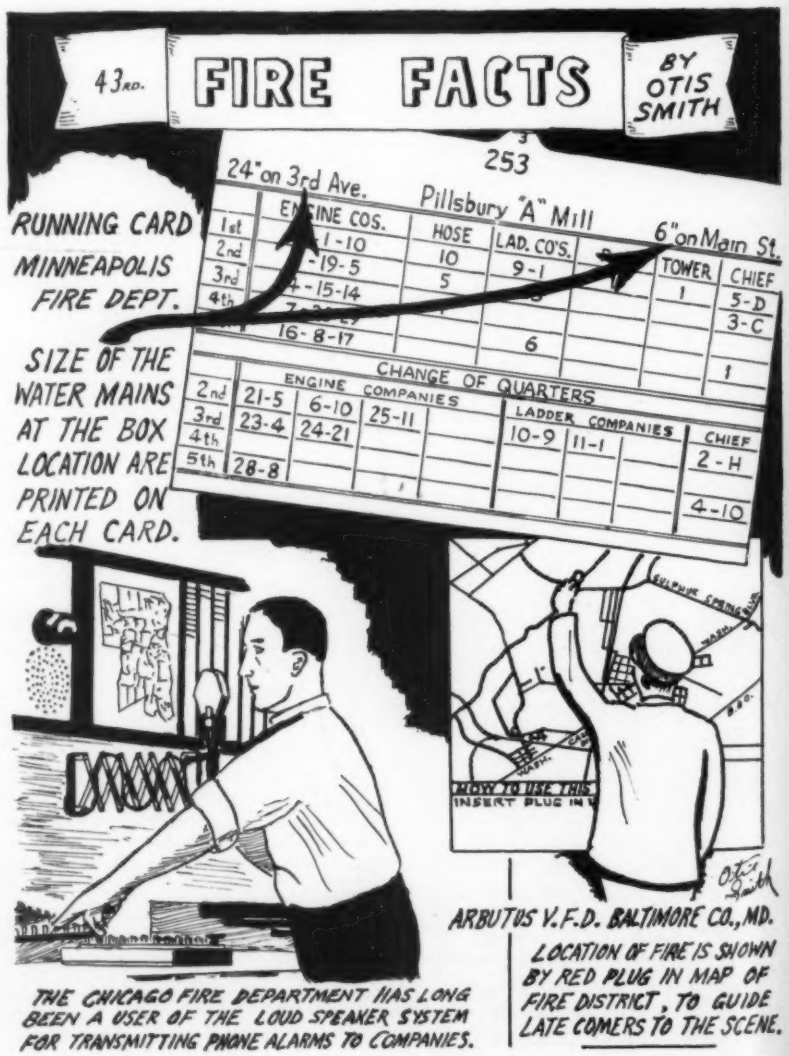
Drillmasters' Association Hold Meeting

The Connecticut Drillmasters' Association held their annual meeting on July 24, at North Granby, Conn., as the guests of the Lost Acres Fire Department. The morning session consisted of a discussion of the workings of fire pumps. Then the men went to work on two pumps. Pressure tests were made with different layouts of hose lines. Relay work was practiced and the men were shown what portable pumps can do in the way of supplying water.

M. W. Lawton

New York Firemen Elect Officers

At the forty-seventh annual convention of the Central New York Firemen's Association, the following officers were elected: President, J. W. Merrill, Waverly; First Vice-President, H. B. Nichols, Binghamton; Second Vice-President, H. A. Spencer, Sideny; Secretary, L. H. Ingersoll, Cincinnatus; Treasurer, Sanford J. Hennion, Skaneatles; and Chaplain, Reverend L. W. Lunn, Waverly.



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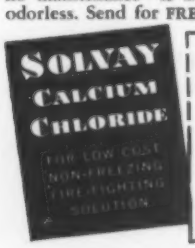

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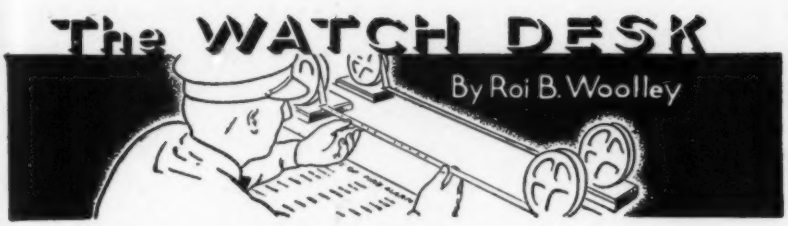

Our inquiring reporter overhauls the firemanic news of the day

Pride Goeth Before a Fall!

We can't vouch for this 'un, but our informant tells us it's true s'elp him.

Seems that a small Westchester County, N. Y., community was blessed with a brand new, shiny, red cab-job pumper. At the first opportunity the vamps took it to a reunion and paraded in a nearby town, and got a well-earned award.

Returning home in triumph, with the buttons popping off inflated bosoms, the Brothers put their pride back in quarters and retired homeward to boast of their victory.

Day or two later, the local alarm sounded for a real "worker." Here, at last, was a chance to prove that the new job would win plaudits in action as a fire fighter as well as in the parade line-up. Whereat the vamps stormed the firehouse, stepped on the starter and got to the fire in "nothing flat"—only to find —curse the luck!—that when they'd gone to the parade all the hose had been removed from the body of the rig—and that when they returned, they were all so full of *joie de vivre* and *whathaveyou*, that they had plumb forgotten to repack it! And there you are!

* * *

What Price Bein' a Fire Chief?

From Ord, Neb., we learn that being a caretaker or janitor, apparently is more desirable than being a fire chief! Two years ago E. J. Shirley, who had served 42 years as fire chief, retired to become caretaker of a golf course.

Now, the news is that the latest incumbent, Cecil Clark, has resigned his white helmet to take on the job of janitor at the new post office!

Anybody wanna job as Chief in Ord?

* * *

From Out Des Moines Way

Contrib. Earl Robinson tells us about Mrs. Mary Gibson, Ukiah, Cal., who was standing on steps of courthouse watching fire engines go by when a swinging door hit her, knocked her down steps; she sued for loss of teeth, etc., and got $7,000 award! Anybody else wanna watch the 'gines pass? . . . Then there is Mrs. Ruth Payne of Boone who filed damage claims of $2,000 each for herself and hubby against a Clayton Shaffer of Fraser because latter is alleged to have made slanderous remarks about a fire in a beer tavern which plaintifs have under lease at Fraser. Deponent sayeth not what happened to the tavern! . . . From the Des Moines *Tribune*, he sends two items, one a "card of thanks" reading *"I hereby take this means of expressing my thanks to my neighbors, friends and fire department for their assistance during the fire which destroyed our home July* 18." All hands musta done a good job! And an item about the mother who was considerably "that way" and who mistook labor pains for the effects of a green apple she'd eaten . . . result—the doc' was late in arriving and the fire department emergency squad "did its stuff!"

* * *

"Fire" Water Drowns Fish

Out in Decatur, Ill., several hundred fish were "drowned" in the Sangamon river, during a warehouse fire. Seems that alfalfa in the warehouse absorbed oxygen from water which firemen poured into building and when this water flowed into the river, the fish in the vicinity drowned from lack of oxygen. We dunno, we dunno—but it's a good yarn anyway.

* * *

Aw Rats!

During the recent Jersey floods, we got the tale of fireman Samuel Lewellen, Medford, N. J., who sought refuge in a tree to escape rising waters of Rancocas creek and had his claim to a safe perch disputed by ferocious rodents. He was severely bitten. There ain't no justice!

* * *

Quaker City Contribs'

Demon "Clipper" Ed Spranger, of Philadelphia, shoots a bundle of items, among which we find—

The story of how, to honor beloved Chief Walter Fraim of Lansdowne, Pa., the 52 members of his force organized the Walter L. Fraim Emergency Blood Donors Association to carry on his good work. Each member's blood has been typed and will be available to sick who cannot afford to pay for transfusions.

The tale of how Mrs. Viola Morano, Philadelphia, Pa., went searching for cobwebs beneath a sofa with a match —lighted. How her sofa burst into flames and she fainted—how neighbors called the Brothers, who arrived in time for Wm. Grandy, Capt. Eng. 59, to rescue her from death.

The yarn about Richard Hale, Vamp. of Radnor, Pa., who had "intuition" about fires, and was always "first to arrive" when alarm rang. Well, his fellow vamps, disbelieving his "intuitions," found he was setting blazes, forced confession he had set nine fires in two months causing $8,000 loss. He's fourth Montgomery, Pa., County Vol. arrested for same offense since February.

And items about how reflection of Old Sol on window caused alarm to be sounded in Philly, unnecessarily bringing Asst. Chief Simmler and 20 pieces of apparatus. . . . The sale of three old pieces of Atlantic City apparatus as "junk" for $154.75—to become "scrap iron." . . . How "cooling-system" of Quaker City's City Hall got "overheated" and the Braves hadda be called. . . . How five men were injured—four seriously—when gasoline engine in pump house on farm near Queenstown, Pa., exploded due to short-circuit. . . . How citizens of a district in Philly petitioned for more hydrants, after shortage of mains contributed, 'tis said, to unnecessary loss in warehouse fire. . . . How firemen played water for two hours on roof of chicken house at Millsboro, Del., in order to prevent death of 12,000 pullets from heat of the sun (one of owners of "hennery" overcome and rescued). . . . How, while removing paint from kitchen walls, fumes from chemicals, ignited by kitchen stove's pilot light, exploded, injuring two in Quaker City. . . . And how a jacked-up auto slipped off the jack, punctured gasoline tank, started fire in garage in Easton, Md., that damaged three cars, blew out skylight!

* * *

Contrib' Chatter

Spite of vacations, hell, Hitler and high water, our eagle-eyed newshawks continue to send their contributions to this 'yere column. For which thanks!

Toledoan, Charles Mensing, witnessing burning of California building at Golden Gate Fair rushes us 'Frisco papers with details. Brother Spanger, from the Quaker City, and Earle Robinson, from out Iowa way, send a bale o' "Ripley's" and whathaveyou. Bill Patterson of Pittsburgh, on his "Postman's holiday" (visiting firemen along the route)) writes us volumes! And thanks to Jerry Daly, New York City, for his many favors. Also to Bill Doscher and other Westchester Vamps and to our several "anonymous" contrib's in New England and elsewhere. If you don't see your efforts in this issue, be patient, they'll show up, eventually!

* * *

Hot off the Ticker

When Francesco Molinario of Novara, Italy, left for a vacation, he hid his life's savings of 70,000 lire in paper money inside his radio set. He returned to find a short circuit had caused a fire in the radio and all that remained of his money was charred paper. . . . In Scottsville, Ky., Floyd Stafford and Jack Mitchell, farmers, ,were fined $10 and costs on charges of pouring flammable liquid on two horses and then setting fire to them, to make them work. . . . Crew of fireboat "Firefighter," N. Y. F. D., recently extinguished a fire that was brought right to their mooring. A Dept. of Sanitation barge caught fire in East River; the towboat cap' at once hauled the blazing heap to the "Firefighter's" quarters. . . . A C.C.C. enrollee was burned to death and two others severely burned in brush fire in Boise mountains, Idaho. . . . Orchids to 14 youths who kept heads, leaped into sea when their fishing boat burned off Jersey coast. All summer students of Admiral Farragut Academy, they calmly donned life preservers and jumped when ordered to do so by two instructors, who were also burned. . . . While cleaning a bedspring with flammable liquid (bug killer??) Edw. Willis, New York City, was badly burned when stuff flashed! . . . The August heat exploded a balloon on exhibition at Hayden Planetarium, New York City, releasing miniature radio set that had been attached to it and that floated to floor on a parachute. . . . Twice within three weeks, fires in Croyden, Ind., interrupted meetings of the Vamps, during which they were planning on how to fight fires. . . Officer

(*Continued on page* 479)

Among the Fire Fans

By Otis Smith

THE Second Alarmers' Association of Philadelphia has issued a new set of by-laws, a copy of which was received by this writer from Austin B. Brough, Secretary. These by-laws are a good model to guide any group interested in the coffee-wagon service. Strict rules are provided to insure proper discipline, in order that the group may continue to enjoy the good favor of the fire department officials. During the recent Camden fire, the Second Alarmers were on the fire grounds for two days, as were coffee wagons from Camden and Willow Grove, Pa. The Second Alarmers' station is located at 51st and Sansom Streets, in Philadelphia.

While on the coffee-wagon subject, this writer would like to clear up a situation caused by a so-called fire fan. A rumor circulated among fire fan circles in Baltimore, to the effect that this writer was trying to organize a coffee-wagon service whether the fire department wanted it or not. It was said that "a hundred or more" fans were to be banded together, in order that they might descend upon the startled fire department officials with their demands.

A more undiplomatic way of organizing a fire fan club would be hard to imagine. Anyone attempting to put over such a scheme could not be a fire fan, whatever else he might be. This writer is positively not in on any such scheme, nor is he associated with the persons proposing it. He is always interested in constructive suggestions on fire fan activities, but never in anything that would harm the lot of the humble fan.

Box 9 Association, Attleboro, Mass., has appointed Jesse W. Carpenter, Jr., as correspondent to this column. This association operates a patrol in Attleboro under direction of Box 9 President John W. Wolfenden.

Thanks to Edward Sprangers, 2228 W. Oakdale St., Philadelphia, for those clippings and pictures on Camden's big fire. . . . William N. Schwartz, 72½ Embury Ave., Ocean Grove, N. J., sent two nice photos of an old chemical engine. It is a 1909 Autocar, and quite an interesting piece of equipment. Mr. Schwartz has the negatives and is willing to trade prints. . . .A correction; last month we mentioned Tom Corvallis, the correct name is Tom Smith. Mr. Smith is a member of the fire department of Corvallis, Oregon.

Two young fans of Huntington Park, California, are heard from. They are Walt Pittman (age 18), and Don Shelburne (age 19), of 5954 Malabar Street, Huntington Park. Walt and Don are great followers of their local fire department and are privileged to assist on runs. There are two stations in their city. No. 1 houses a 1940 triple combination Kenworth pumper with a Hall Scott motor, a 1930 Mack city service, and two chiefs cars. No. 2 station houses a 1930 Mack triple combination pumper, and a 1920 Seagrave triple combination. There are twenty-six men in the department, including the Chief. The department gets around fifteen to twenty runs a month.

Three members of Minneapolis Box 35 made a motor tour of the eastern and northern states recently. They were "Stub" Chrissinger, O. A. Peterson, and eighty-two-year-old J. W. Peterson. The fans visited all large cities on their route and enjoyed a ten-day stop in New York. While there, they failed to see a single fire, although they spent some time at the Fire Bell Club on W. 33rd Street. "Stub" Chrissinger saw his first fire boat when he was conducted through the "Firefighter" by an obliging fireman.

The trio stopped in Baltimore, during which time this writer had an interesting chat with them. Mr. Chrissinger told of Box 35 which now is recognized by the fire and police department of the Twin Cities. Three of the members carry coffee utensils in their cars, and one or all of them respond to additional alarms of fire. Some members make coffee on the range at the nearest fire station, while others are out buying crullers. When the fire is under control both firemen and police are served. Box 35 men also assist in stretching fire lines and helping persons driven out by the fire.

The prime rule of Box 35 is the standard rule of good fire fan clubs everywhere. That rule is to keep out of the fire department's business, and to let the Fire Chief run the department. Fans may contact Box 35 through "Stub" Chrissinger at 2439 Colfax Avenue South, Minneapolis, Minn.

Members of San Francisco's Phoenix Society have a fire call list, based on the number of times each member responds to a third alarm. Members who turn out most frequently are listed to be called first whenever a third comes over the special switchboard service.

William H. Hurd, 164 Richton Avenue, Highland Park, Mich., has built his own receiver for checking on fire alarms. Mr. Hurd says that he built the receiver at a fraction of the cost of a commercial receiver. Practically all fire fans use the police radio for receiving fire alarms. Many also possess the receiver on which they may hear cars calling in with information on the nature of the fire.

Members of the Boston Sparks First Aid Unit attended a lecture and demonstration at the Weymouth (Mass.) fire station. Deputy Chief Fred Webb also gave a detailed lecture on a new type of resuscitator. The Deputy also went over the varied first aid appliances carried on Weymouth apparatus. After being shown around the Central Station and the Fire Alarm Office, the first aid men were served refreshments by the crew of the Headquarters companies.

Boston Sparks are also "plugging" the Red Book, studying for the coming fire department examination which will be held on October 19. The Civil Service Commission has issued a new manual of study this year, and applicants are required to master the contents.

Model making notes. . . . One modeler is Joseph Gauner, 351 Balmar Road, Leich Hardt, Sydney, New South Wales, Australia. He has been in correspondence with Jimmie Jackson of 147 E. Cayuga Street, Oswego, N. Y. . . . Clarence Woodward, Detroit model maker, had photos and data on model fire apparatus in September "Model Craftsman." . . . One interested in horse-drawn models, though not a model maker, is John Jay Weisberger, Editorial Department, N. Y. Journal American, 6 Centre Market Place, New York.

The man who gave the nickname "Scrappy" to Wm. Patterson of the Pittsburgh Chiefs Office, is dead. He was a big six-footer named George Salzmann. He joined the fire department around 1893 and worked on Truck "C," now Truck 12. From the Mayor on down, it's "Scrappy" when they speak of diminutive Wm. Patterson.

Larry Pegler was a recent visitor to Baltimore, and also to New York where he visited the Fire Bell Club. Larry is the son of former Battalion Chief Pegler of Detroit. We hear that Larry was greatly enthused over the Baltimore Fire Department. Also in the fire fan hobby in Detroit is George B. Hill, 6621 Steadman Ave., Dearborn, Mich.

Two fire fans of Baltimore are Robert Grumbine, 2312 Edmondson Avenue, and Don Ederr, 1617 Moreland Ave. "Bob" Grumbine is strategically located opposite No. 36 Engine Co. Don Ederr is the possessor of a movie camera and has some swell movies and stills of Baltimore apparatus and fires.

Firemen to Take Physical Tests

The plan of bi-yearly physical examinations of firemen adopted by Philadelphia, Pa., will go into effect about October 1. The physical tests will be complete, including acuteness of vision, X-rays of the chest, heart examinations and analytical blood and kidney tests. If the results of the tests disclose that a man is unfit for his present duties, he will be recommended for transfer to other work.

A Fire Dog and His Trainer

Here is "Chief No. 2" and his trainer, Andrew E. O'Hotnicky, Elyphant, Pa. The dog has been taught to climb ladders and rescue a rag doll; ring the bell on the pumper, and other stunts. His predecessor, Chief No. 1, was well known in many parts of the country, and died by poison. The new Chief will appear at the annual Pennsylvania Fire College at State College.

ART ESPEY

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Here you see the Tungar one-battery Chargers, the 5-ampere and the 6-ampere. Also—the Tungar 6-battery Charger.

Write for a G-E Tungar Full-line catalog now. Section A-0869, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

"We Put Out a Shingle Roof Fire in Less Than 3 Minutes with One INDIAN FIRE PUMP—"

That convinced Chief C. E. Keifer, of Stockton, Ill., Fire Department, what these pumps will do.

HERE IS CHIEF KEIFER'S LETTER

D. B. Smith & Company — Stockton, Illinois
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Gentlemen:

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The INDIAN worked 100% perfect. We immediately added three more of these INDIANS to our equipment due to the fine work these INDIANS will do.

Very truly yours,
C. E. KEIFER, Chief of Fire Department

And This from Oakhurst, Indiana

D. B. Smith & Co.
Utica, N. Y.

Gentlemen:

Our INDIANS have not only been particularly valuable in roof and rubbish fires, but also in numerous small house fires. We find they do a much cleaner job and are easier to transport than the 2½ gallon soda and acid extinguisher. We are well satisfied with our INDIANS and believe that every Fire Department should have them as part of standard equipment.

G. M. EBERHARDT,
Oakhurst, Ind., Hose Co.

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Mill and Mine Supply, Inc.
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THE ELECTRO-MECHANICAL FIRE HOSE DRYER — CIRCUL-AIR — *AIR-CONDITIONS AS IT DRIES*

ASK YOUR FIRE HOSE SALESMAN, OR WRITE TO

THE CIRCUL-AIR CORP.

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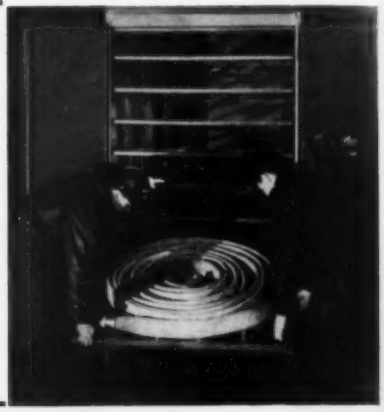

FATC-10 battery charging rectifier or trickle charger shown is built for any number of circuits required. Direct-connected to fire alarm circuits, it requires only one set of batteries for each fire alarm circuit. No moving parts — long life. Send for bulletin 29.

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By FRED SHEPPERD

In Collaboration with the EDUCATIONAL COMMITTEE *of the* INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

THERE have been books on fire-fighting, but never anything so complete and authoritative as the "Fire Chief's Handbook." This book gives a reliable, up-to-the-minute answer to almost every question that might come up in modern fire-fighting practice.

For progressive fire chiefs, interested in up-to-date fire fighting methods, the "Fire Chief's Handbook" will be a mighty valuable reference guide. It gives to ambitious fire department officers and men, in plain, understandable form, information that should prove extremely helpful in preparing for promotional examinations. In fact, it is a book every fighter needs and ought to have. *The Edition Is Limited—Better Order Your Copy Today.*

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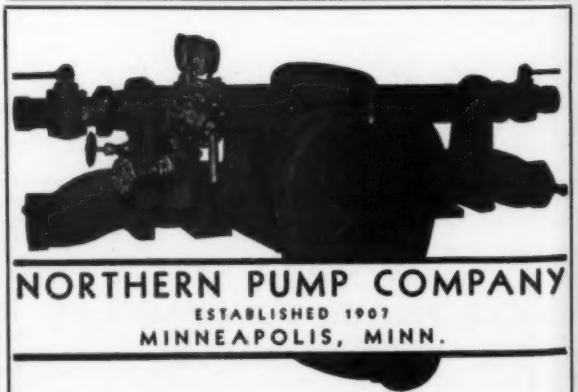
ANOTHER NATIONAL PUMPER

A 750-gallon triple combination pumper recently delivered to Zanesville, Ohio, fire department.

NATIONAL FIRE APPARATUS CO.

Galesburg, Illinois



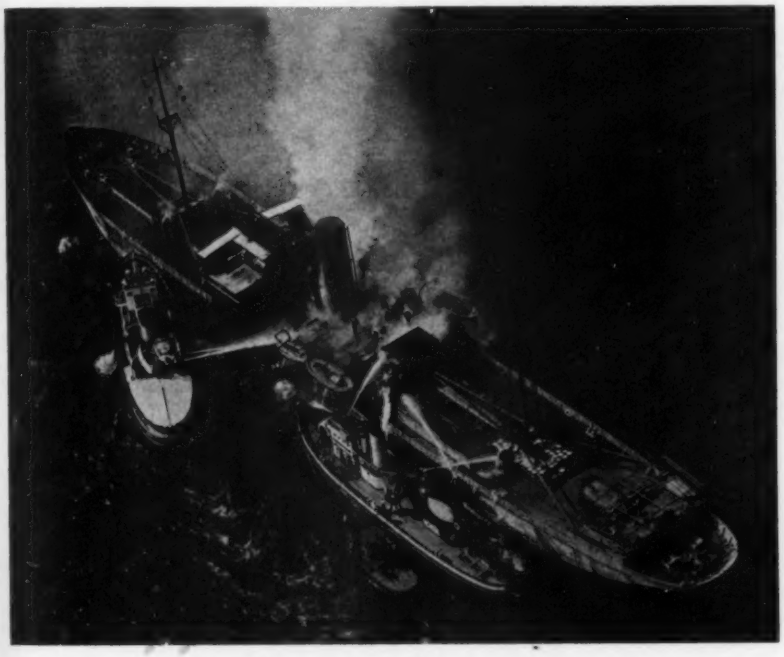
NORTHERN PUMP COMPANY

ESTABLISHED 1907

MINNEAPOLIS, MINN.

N. Y. Fireboats Fight Blaze in Freighter

Crews of two fireboats of the New York Fire Department fought, for ten hours, a fire that broke out in the hold of the Norwegian freighter, "Lista," en route to Halifax, N. S., where it was scheduled to pick up a British convoy headed for Liverpool. Two firemen were burned when oil tanks exploded.



Fireboats Fighting the Fire Which Started on the "Lista"

The boat, an oil burner, was built in 1920 and is 360 feet long. It has a crew of twenty-seven men of mixed nationalities. While there were no munitions on board, it had fifty drums of gasoline on deck, and a cargo of tobacco, paper, lumber, flour, alcohol, jute and hemp.

The ship left her wharf in Brooklyn after much delayed mending and fixing of engines and boilers. The Chief Engineer was not on board. When the boat was outside of Sandy Hook, her master wirelessed for tugs to come to her aid and tow her back to port. There was not enough steam to operate the engine which controlled the rudder, and one of the tugs that responded had to serve as an improvised rudder.

On the way back to port, fire broke out in the engine room, and involved the oil residue in that section. As the steam was low, the fire pumps could not be operated to develop a good hose stream. When fire was discovered, the course of the Lista was changed to a nearby shore.

The Fireboat Gaynor was sent from Brooklyn and within an hour, the Fire Fighter was sent out.

As the fire in the boat spread, it reached the fuel oil tanks and the two firemen were burned when the tanks exploded. The boat was beached.

While there was evidence of much neglect and carelessness on the boat, there was no sign of sabotage.

Chemical Fire Takes Nine Lives

Five Chicago, Ill., firemen were fatally burned and nine others suffered severe injuries on August 17 following two explosions in the Van Schaack Brothers Chemical plant at 3430 Henderson Street. Twenty-eight other firemen had been hospitalized the day before while fighting two other fires, one in a house which was being fumigated with cyanide gas.

The chemical company fire occurred when a 350-gallon tank of benzine exploded, apparently due to a short circuit in electrical equipment. Two trucks and a Battalion Chief responded to a still alarm at 9:39 a.m. Two minutes later, a "phantom" box, 6178, was struck by orders of John T. Gegan, Chief Fire Alarm Operator. A 2-11 was struck seven minutes later and the 4-11 (bringing in both 3-11 and 4-11 alarm response) was struck by Fire Commissioner Michael J. Corrigan himself.

The second and third explosions, in which the casualties were suffered, came after the original fire apparently had been extinguished. Firemen had just been ordered out of the building where the fire originated and were picking up equipment when the explosions took place. Those picking up, and two other crews with lines, were trapped in a narrow passageway between two buildings at the plant.

Investigators said that highly inflammable liquids or gases were probably released by the first explosion and came into contact with a spark of some kind, causing the fatal explosions.

Commissioner Corrigan, who saved an opera crowd in the Auditorium theatre in 1917 by carrying out a lighted bomb placed there by a terrorist, led his men to the rescue of the victims. Warned that there might be more explosions, the Commissioner nevertheless plunged into the seared passageway. Together with Fireman Patrick Driscoll of Squad 6, who just passed his probationary period, the Commissioner carried out Fireman Charles Harrsch whose clothes were ablaze. The Commissioner later refused to discuss the risk he took, but said he would recommend a medal for Driscoll. Division Marshal James Cowhey was one of those who rushed in with the rescuers.

The injured were rushed to Alexian Brothers hospital with the exception of one man who was taken to Belmont hospital.

L. L. Van Schaack, Vice-President of the chemical company, which supplies many drug stores, told Commissioner Corrigan that he was standing near the tank of benzine talking with Foreman Fred Baker when the explosion took place. Twenty nearby employees fled to the street unharmed.

Especially sad was the death of Fireman Carroll. He left a wife and four children with a fifth child expected soon. Father William J. Gorman, Fire Department Chaplain, was at the bedside of those who died.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of August, 1940. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending August 31	Loss in Thousands of Dollars
Yuba City, Cal.—Dwelling of Robert Elliott, 1 mile south	50
Paoli, Ind.—Factory of Paoli Tomato Products Co., destroyed	80
Romulus, Mich.—Plant of Romulus Gray Iron Foundry Co.	80
Tulsa, Okla.—Property occupied by C. C. Forrester Welding Co.	75
Calhoun, S. C.—Clemson-Calhoun school building	70
Oklahoma City, Okla.—100 head of live stock and pens of Oklahoma National Stockyard Co.	50
Winchester, Ky.—Five business houses destroyed	65
Muscatine, Iowa—Lumber shed of Roache & Mussar Co., destroyed	65
York, Pa.—Ebert bldg., housing business establishments	125
Knoxville, Tenn.—Plant of Sherman Concrete Pipe Co., destroyed	200
Chicago, Ill.—Plant of Advance Cabinet Co., destroyed	50
Hopkinsville, Ky.—Hotel Latham, destroyed	200
Los Angeles, Cal.—Mountain and resort homes in Los Padres National Forest	80
Visalia, Cal.—Buildings and equipment of Tugstore Mining Co.	50
Lancaster, Ohio—Lancaster Implement Co. warehouse destroyed	50
Bakersfield, Cal.—Two warehouses owned by L. B. King destroyed	80
Iowa, La.—Division headquarters of Shell Oil Co., Inc.	50
St. Joseph, Mo.—Bldg. occupied by F. W. Woolworth store and cafeteria	170
Ludlow, Ky.—Plant of Magnus Metal Works damaged	170
San Francisco, Cal.—Aministration bldg. of Immigration Station, Angel Island	50
Susanville, Cal.—Property occupied by Susanville Meat Co.	65
McCall, Idaho—Block of business buildings damaged	80
North Wilkesboro, N. C.—Plant of Home Chair Co., adj. property	250

Columbus, Ohio—Plant of Palmer-Donavin Mfg. Co., damaged..... 125
Oakland, Cal.—Gross Bros. Furniture Co., adj. Moose Club..... 65
New Bedford, Mass.—Super market and Portuguese Republican Club..... 50
St. Agatha, Me.—Church and adj. property 60
Russell's Point, Ohio—Roller skating rink and boardwalk at Indian Lake..... 50
Los Angeles, Cal.—Plant of Philco Oil Co., adj. property 150
Chicago, Ill.—Plant of Van Schaack Chemical Works 50
Brantford, Ont.—Factory of National Canned Foods, Ltd..... 165
Windsor, Ont.—Norton-Palmer Hotel damaged 50
San Diego, Cal.—Seed and grain whses. of F. C. Silverthorne & Sons destroyed.... 80
Shamokin, Pa.—Hirsh Shoe store and adj. establishment 125
Decto, Cal.—Four bldgs. of Pearce Bros. Canning Co. 50
Waynesboro, Pa.—Factory bldgs. of Geiser Manufacturing Co. 50
Woonsocket, R. I.—Waste plant of Benjamin and Phillip Mackatz..... 70
Dallas, Tex.—Building and stock of the National Pants Corp..... 50
Wedowee, Ala.—Randolph County Court House 50
Martinez, Cal.—Associated Oil Co..... 125
San Francisco, Cal.—Golden Gate Exposition building 500
East Somerville, Mass.—Coal pocket and building of the Somerville Fuel Corp.... 100
Elma, N. Y.—Barn of John R. Lee..... 50
Harrisburg, Pa.—Warehouse and branch office of Oliver Farm Equipment Sales Co. 400
York, Pa.—Garbage reduction plant of C. C. Fischer Co..... 50
Yakima, Wash.—Woodyard of John Dower Lumber Co. 110
Smackover, Ark.—Mill sheds and several thousand feet of timber of J. W. Reynolds 50
Flagstaff, Ariz.—Planing mill of Southwest Lumber Mills, Inc..... 75
Pittsburgh, Pa.—Office and warehouse of Peerless Wall Paper and Paint Co..... 50
Los Angeles, Cal.—Factory of Anthony Macaroni and Cracker Co..... 80
Hallett, Okla.—New Public School..... 90
Lafayette, La.—Jefferson Island Salt Mining Co. 700
Sanford, Me.—Service station and garage.. 50
Hamilton, Ont.—Five farm buildings of Asylum Farm, a unit of Ontario Hospital 50
Los Angeles, Cal.—Bower Cigar and Candy Co. 50
Miles City, Mont.—WPA warehouse and office building 80
Cleveland, Ohio—Yard and 2,000,000 feet of lumber of Forest City Lumber Co.... 80
Mexico City, Mex.—Pemex Refinery..... 800

Chief F. A. Sullivan Retires

Terminating thirty-one years of service in the Lawrence, N. H., Fire Department, Chief Francis A. Sullivan applied for retirement after two months' illness.

Chief Sullivan was born in Lawrence in 1881. He learned and followed the bricklayer trade until he joined the Fire Department in 1909. He was appointed a permanent fireman in 1910. In 1911, he was promoted to Lieutenant of the department, which position he held until he was appointed acting Chief in 1932. He has served as President of the Mutual Relief Association of the Lawrence Fire Department and was affiliated with the State Firemen's organization.

Fire Surgeons to Meet

The nineteenth annual convention of the International Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions will be held in the Statler Hotel, Detroit, Mich., September 26 to 28, inclusive, according to the Secretary of the association, Dr. Harry M. Archer, Deputy Fire Commissioner of New York.

The scientific program has been arranged by Dr. Gerald H. McMahon, Senior Surgeon of the Detroit Fire Department and President of the Association.

The calendar of the session embraces current topics in medicine and surgery as they affect civil service employees—particularly Policemen and Firemen. Local hospitals will be visited and clinics are to be arranged by Police and Fire Surgeons of Detroit.

The social calendar for the doctors and their wives is in the hands of a committee headed by C. Hayward Murphy, Fire Commissioner Emeritus and Honorary Member of the Association.

WM. JEROME DALY.

Oldest Fire Chief Dies

George Wallace, Fire Chief Emeritus of the Cleveland, Ohio, Fire Department and who was believed to be the oldest Fire Chief in the United States, died

The Late Chief George Wallace

at his home at the age of ninety-two. He served sixty-one years with the Cleveland Fire Department. Even though he gave up active duty in 1931, he continued to be a fireman. He lived at the firehouse, got up at every alarm and observed the rules of the company. At one time, he expressed his hope which was to "live to be 100."

Former American LaFrance Official Dies

Following an illness of several weeks, Arthur E. Rhodes, former Vice-President, Treasurer and General Manager of the American-LaFrance Fire Engine Company, died at his home in Attleboro, Mass.

Although Mr. Rhodes retired from the American-LaFrance in 1927, due to eyesight failure, he remained a resident of Elmira until about a year and a half ago. At that time he returned to his birthplace, Attleboro.

Mr. Rhodes joined the LaFrance organization as a salesman in the San Francisco office in the days when the company was building horse-drawn fire apparatus. His ability attracted the attention of the company executives at the home office in Elmira, and he was transferred to that city in 1905 as Assistant Sales Manager. He held this post only a short time before being promoted to General Manager and Treasurer of the company, which later was to become the American-LaFrance Foamite Corporation.

Former Chief A. T. Brown Dead

Former Chief A. T. Brown of the Hingham, Mass., Fire Department, died recently following a long illness. Chief Brown, who was a native of Camden, Me., joined the Hingham Fire Department in 1913. He succeeded John Hollis as Chief of the Department in 1925 and remained in that position until 1938, when he resigned. He was a member of the Massachusetts Fire Chiefs' Club and the New England Association of Fire Chiefs.

A. W. Vennema Dies

A. W. Vennema, Mechanical Superintendent of the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., died at his home at the age of fifty-three years.

Mr. Vennema, a graduate of Stevens Institute of Techology, has been associated with the Manhattan Rubber for thirty-one years. He worked his way up in the organization and was appointed Mechanical Engineer in charge of maintenance ten years ago. He was an active member of the American Society of Mechanical Engineers and also a member of the Kenilworth Society of Passaic.

Volunteer Firemen Hold Convention

The 42nd Annual Convention of the Onondaga County Volunteer Firemen's Association of New York State, was held in the village of Solvay, N. Y., July 17 and 18. J. J. McConnell, President of the Firemen's Association of the State of New York was the guest speaker at the opening session.

At the afternoon session, the following officers were elected for the coming year: President, B. A. Vannauker of Minoa, Vice-President, Robert J. Beaudoin of Jamesville, Secretary; Geo. H. Evans, Jr., of East Syracuse; Assistant Secretary, G. May of Marcellus, and Treasurer, J. A. Leonard of Minoa.

The second day of the convention was taken up with the annual parade followed by the tournament of sports events. Minoa was selected as next year's meeting place.

Inspection Reveals Bad Fire Escapes

A thorough inspection was carried through in Dubuque, Ia., by the Fire Department in which it was found that about ninety-eight per cent of the fire escapes were defective. Many major defects were found that constituted serious life hazards for occupants of the buildings and firemen using the escapes. After the inspections, written orders were sent to the owners of the buildings, in which each defect was mentioned in such a manner as to facilitate their location and repair.

It was necessary to remove a number of fire escapes that were beyond repair.

Another feature of the inspections was the requirement that the word elevator should be painted in six-inch letters at each window opening into an elevator shaft. The purpose of this requirement is to prevent firemen from entering the building through these windows, thereby eliminating the possibility of death or serious injury received by falling down the shaft.

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3/4 of all the opportunity for improvement lies in more efficient salvage work. Control loss from water damage by the use of SHUREDRY SALVAGE COVERS and thorough drill in their use as covers and catch-alls. SHUREDRY Salvage Covers are light, easy to handle, do not freeze even at very low temperatures and will not crack when folded for storage.

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MINNEAPOLIS NEW ORLEANS KANSAS CITY, KAN.

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MANY CITIES ADOPT MIDWESTERN COAT

The new Midwestern Safety Coat recently introduced has met with instant success because Fire Chiefs, Firemen, and Safety Boards quickly saw its adoption meant a big decrease in bad accidents.

The picture tells much of the reason for the success of this Midwestern Coat. Firemen can be seen on dark nights—through fog, and smoke. Fewer men will be knocked off ladders and buildings by heavy hose streams . . . will be more easily found in fallen debris.

Midwestern has developed a new exclusive rubber cloth in which the white stripe is molded in. It is rubberized as a part of the material and is not sewed in or glued on.

Another great feature is the famous Midwestern Safety snap that can be instantly fastened or unfastened with one hand.

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Note Chiefs:
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MIDWESTERN MANUFACTURING CO.
Mackinaw, Illinois
Manufacturers of a complete line of firemen's quality clothing.

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Send for complete details of the M.S.A. One-Hour Oxygen Breathing Apparatus—also available in back-type model—and let us arrange an actual demonstration for you and your Department. No obligation of any kind!

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Pittsburgh, Pa.
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MINE SAFETY APPLIANCES CO. EFFICIENCY SERVICE SAFETY PITTSBURGH, PA.

THE M·S·A ONE·HOUR
OXYGEN BREATHING APPARATUS

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Below are answers to questions appearing in the August issue of this journal.

1. Because of the large number of employees usually found in such establishments, as well as the highly combustible stock of material present.
2. Light cotton goods, silk and artificial silk and wool.
3. Where sprinkler system is available first engine company connects at once to it.
4. Send one or two men to roof to ventilate and devote all other activity to saving lives.
5. Use water sparingly; so direct water from the floor that it will do least damage to materials on floors below.
6. Use streams carefully to prevent unnecessary breakage of stock.
7. Heavy insulation of all wall surfaces in cold rooms.
8. Possibility of explosion, and asphyxiation of men from ammonia or other fumes.
9. Carbon dioxide and sulphur dioxide.
10. Very beneficial both in extinguishing fire and in absorbing troublesome gases.
11. It is not.
12. No. Egress of persons may be obstructed thereby.
13. By way of ladders, fire escapes, and up face of building.
14. Panic.
15. Opening up over elevator shafts and stairwells as well as opening windows on various floors.
16. Collapse doors or break them out.
17. Because of the number and ages of inmates therein.
18. Yes.
19. Look under beds, tables and in closets and other points of concealment where children might hide.
20. No.
21. First reduce the layout to a single line of 2½ inch hose.

    Factor for reducing 3½-inch hose to 2½-inch is 5.8.
    600÷5.8=103.4 feet 2½-inch hose.
    200 feet 2½-inch hose=200 feet 2½-inch. Total, 303.4 feet 2½-inch hose.
    E.P.=N.P.× (1.1×KL).
    Where E.P. is Engine Pressure N.P. is Nozzle Pressure, and is 70 pounds.
    "K" is a factor depending upon nozzle and hose diameters. For 2½-inch hose and 1¼-inch nozzle "K" is 0.248.
    "L" is the number of 50-foot lengths in the line and is 303.4 ÷50=6.07.
    Then E.P. =70× (1.1+.248×6.07).
    =70× (1.1+1.505).
    =70×2.605.
    =182.35 pounds.
22. A dry system is one in which there is air under pressure instead of water in sprinkler pipes.
23. In buildings which are not sufficiently heated to prevent freezing of water in winter.
24. It is slower in action, more complicated, and there is greater possibility of interruption in the sprinkler service.
25. A dry pipe valve.
26. ½-inch.
27. Yes, 1-inch outlets, and they are used over elevators and similar places.
28. 31 gallons per minute.
29. No. Part of the space is filled with air under pressure.
30. To provide a means for fire engines to deliver water to the system.
31. To enable the fire department to get fire streams in operation at high fires with the least possible delay.
32. No. Hot water may injure the paint finish.
33. Richer mixture needed when starting engine.
34. By placing a small quantity of gasoline in each cylinder through priming valves.
35. 20%.
36. 60 degrees below zero.
37. Gasoline supply, water in radiator, oil level in motor, condition of battery, and gasoline and water leaks.
38. Yes.
39. Two.
40. Yes, large pumps are.
41. Low pressure.
42. In refrigerating systems.
43. It is exceedingly poisonous when inhaled, and is explosive when mixed with air.
44. Yes.
45. It increases the intensity of combustion tremendously.
46. In household refrigerating systems, and is dangerous because it is explosive when mixed with air.
47. Artificial refrigeration, and for bleaching straw, feathers, silk, etc.
48. No. It actually serves as a fire extinguisher.
49. When suspended in air it forms an explosive mixture.
50. It induces spontaneous ignition by oxidation.
51. Acetylene gas.

Lightning Causes Church Fire

During a shower in West Long Branch, N. J., a bolt of lightning struck the steeple of the 131-year-old First Church and started a fire which was discovered about ninety minutes later. The West Long Branch Fire Department responded, consisting of two 750-gallon triple combination trucks and headed by Chief Herman Rohbeck. An aerial truck from Long Branch was summoned. The fire, which apparently was burning very slowly, was brought under control with little water damage.

Firemen Taught Anti-Aircraft Gunnery

In addition to fire protection, the Boston, Mass., firemen were given lessons in anti-aircraft protection. The lessons were given under the supervision of Sergeant Graham Evans of the 211th Coast Artillery, Anti-aircraft Battery F, Massachusetts National Guard, and they are the first of such courses to be given the fire fighters in this country.

First of all, the firemen were instructed and assisted in the dismantling and assembling of an anti-aircraft gun. The gun was then mounted on a truck and the men were given instruction in aiming and firing the gun. This is the first of such activities to be carried on by a department in the country.

Firemen Are Shown Manning the Gun Mounted on the Apparatus—Commissioner W. A. Reilly (in the White Suit) and Chief S. J. Pope Looking On

The Watch Desk

(*Continued from page* 471)

Ed. Lundstedt, Astoria, L. I., N. Y. P. D. force, answered a radio fire alarm to find that his own auto parked in a lot was in flames. . . . Defect in fire alarm mechanism at LaGuardia Field (N. Y.) caused accidental sounding of series of sirens and bell alarms for full five minutes, bringing four pieces of N. Y. F. D. equipment, three police radio cars and field crash-wagon, etc. . . . Oshkosh, Wis., Braves were forced to beat a retreat when, in fighting a fire in a barn, they were attacked by angry bees. Barn burned down; the Brothers of Larchmont, N. Y., also had similar tough time of it when bees swarming in a parish house being demolished went after them. . . . Four Chicago firemen were killed, seven others injured in an explosion that followed a fire in a chemical works. . . . Early killing frosts in N. Y. State brought conservation appeals for extreme caution on part of persons using forest lands due to fire hazard. Rangers of Watsztch National Forest say words can't describe the dryness of the forest; *"whole thing's ready to explode"* they say. . . . Two boys of the Bronx, N. Y. C., were electrocuted when wire on their kites fell across high tension line. . . . When a woman at the Golden Gate Exposition shouted *"The Tower of the Sun is falling"* 700 persons in an outdoor "Candyland" stampeded, at least 50 being bruised or hurt. . . . A "smart guy" gave fire, police and coast guard services on Long Island Sound jitters, and extra work by reporting an "excursion boat afire" in Long Island Sound. . . . Arrest of Wm. Hailey, 27, a fireman of Cripple Creek, Col., ended a 20-year career of arson and resulted in charge of second degree murder placed against him. One "set" fire resulted in death of Morris Dolan, Cripple Creek police and fire chief. . . . When his arm got caught in wringer of washing machine, S. Flores, Jr., Delano, Cal., turned in fire alarm, bringing the Brothers, who extricated him. . . . Contrib's—Send in Your Clippings!

I. A. F. C. Registration

(*Continued from page* 464)

Shepperd, Fred (Honorary), New York, N. Y.
Shaw, Frank D., Chief, Greensboro, N. C.
Short, Sam, Ex-Chief, Oakland, Cal.
Simon, George, Chief, Quincy, Ill.
Skillen, D. W., Chief, Monroe, Wash.
Slade, Charles L., Chief, Des Moines, Iowa
Smith, Carl, Chief, Moscow, Idaho
Smith, W. E., Chief, Murray, Utah
Spreckels, I. W., Chief, Schulenburg, Tex.
Steinkellner, Peter, Chief, Milwaukee, Wis.
Stevens, Jay W., Executive Secretary I.A.F.C.
Steele, V. H., Chief, Billings, Mont.
Styron, C. C., Chief, Atlanta, Ga.
Surfus, E. L., Chief, Oregon City, Ore.
Surplice, W. M., Chief, Rural District No. 3, Portland, Ore.
Swofford, Wallace, Chief, Coeur d'Alene, Idaho

Tallman, Percy E., Chief, Corvallis, Ore.
Tappen, Robert M., Chief, Gardner, Mass.
Taylor, Fred A., Chief, Colorado Springs, Col.
Tenney, C. L., Chief, Santa Barbara, Cal.
Thompson, R. E., Chief, Stockton, Cal.
Tierney, Daniel B., Chief, Arlington, Mass.
Tiller, Ray, Chief, Waterloo, Iowa
Traeger, Earl A., Chief, Minneapolis, Minn.
Trease, E. J., Chief, Raymond, Wash.
Trombley, F. P., Chief, Sault Ste Marie, Mich.
Truesdell, B. W., Chief, Mullan, Idaho
Turk, Louis, Chief, Chisholm, Minn.
Twaddle, George M., Chief, Reno, Nev.

Urbanski, Leo J., Chief, St. Joseph, Mo.

VanSant, Vernon D., Chief, Dixon, Cal.

Warsinske, R. G., Chief, Ritzville, Wash.
Wehlinger, J., Chief, Kalispell, Mont.
Welch, E. P., Chief, Columbus, Ohio
Westatt, George, Chief, Kellogg, Idaho
Wolverton, C. A., Chief, Port Angeles, Wash.
Wyatt, James A., Chief, Arcata, Cal.

Yeager, John, Chief, Sioux City, Iowa
Yett, Ernest, Chief, Bremerton, Wash.

FIRE CHIEFS

why don't *you* . . .

join the ranks of those well-informed Fire Chiefs throughout the Country who have found it expedient to protect the lives and property in their charge with QUAKER QUALITY FIRE HOSE.

Every foot is expertly made. Special selected long staple cotton yarn used. Tube of "live" smooth rubber. Employment of skilled mechanics. Supervision by experts throughout including final tests. Fire Hose you can depend upon when action gets at fever heat.

Multiple Jacket Hose made in four distinct and different constructions.

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COVER'S NOD and SHAKE SMOKE MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke and Saves the Lungs.

WHY GET SICK?

Price $48 per Dozen

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Leading manufacturers of uniforms for the New York City fire department. Samples and prices gladly sent upon request.

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CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted $5 per inch. Position Wanted, $2.50 per inch.

For Sale

Seagrave City Service Hook and Ladder Truck with 230 feet ladders including 50 foot extension and four way deluge nozzle. Truck good as new, run less than 500 miles. Sacrifice price to quick buyer. Charley Rouss Fire Co., Winchester, Va.

Manufacturers' Announcements

Telephone Recorder for Truck Dispatchers

A new low priced telephone recorder is being marketed by the Mellaphone Corporation of Rochester, N. Y., which

The Mellaphone Recording Set

is especially designed for making phonograph records of telephone calls.

It is designed for the dispatcher of fire apparatus as it double checks the dispatching operator from sending the apparatus to the wrong street. As soon as the call comes in, the operator presses the switch which starts the recorder in motion and then he has a complete record of the address and where the call was given from. He may instantly play this back to assure himself of the accuracy of the call. No special knowledge is necessary to operate this set. The records are inexpensive and can be filed away for future reference.

N. J. Fire Equipment Company Moves

Due to increased business, the New Jersey Fire Equipment Company of Dunellen, N. J., has moved its General Office to 318 Front Street, which is just around the corner from their old location. Facilities will be much improved with a larger stock of supplies to be carried in order to accommodate the urgent needs of the Fire Department throughout the state.

Hose Brass Goods Catalogue

The Akron Brass Manufacturing Company, Inc., Wooster, Ohio, has just released a new catalogue on their products. This catalogue is complete in every detail. It is cross-indexed in four ways to enable anyone to find easily the equipment which one is looking for. A pocket is located inside the back cover of the catalogue in which a complete price list is located.

Woodhouse Mfg. Company Represents Peter Pirsch

Peter Pirsch & Sons Company, of Kenosha, Wis., have announced the appointment of Woodhouse Manufacturing Company as distributors of Pirsch fire apparatus in Eastern New York and Long Island.

Clarence E. Meek, formerly New York District Manager of Ahrens-Fox Fire Engine Company, is associated with Chief George J. Kuss, President of the Woodhouse Company, and will direct the work of the Apparatus Division.

The Woodhouse Company has moved into new and enlarged quarters at 17 East 42nd Street, New York.

Captain Ryan Elected President

At the convention of the Massachusetts Permanent Firemen's Association held at Northampton, Captain Patrick Ryan, Northampton, was elected President of the Association. The following officers were elected: John Horgan, Waltham, First Vice-President; Dennis Sullivan, Somerville, Second Vice-President; George Crowley, Salem, Third Vice-President; Captain W. F. Thomans, Worcester, Secretary; Thomas Griffin, Lawrence, Treasurer; and Daniel J. Hannon, Peabody, Sergeant-at-Arms. The Directors elected were: Frank Gero, Hilyoke; Everett Sawyer, Gloucester, and George Carella, Springfield.

Ex-Chief Walsh, Boston, Dies

Peter E. Walsh, former Chief of the Boston Fire Department, died at the age of seventy, following an illness of several months.

Chief Walsh retired from service in 1922, terminating thirty-two years of active service with the department. He had been appointed Chief in 1918 and was the youngest man ever to be named Chief in Boston. Following his retirement, he became Superintendent of the Boston Protective Department. He served in this capacity for a few years, then retired to devote himself entirely to his law practice.

Past Years Officers Re-elected

At the annual meeting of the Virginia State Firemen's Association, held in Bristol, Va., the present incumbent officers were re-elected with the exception of the Executive Committee which will be appointed by the President soon.

The fifty-fifth annual convention will be held in Staunton, Va., on August 13 to 15, 1941.

Convention Dates

Sept. 11-12—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 20th Annual Convention, Smyrna, Del. Secretary, Warren W. Pettyjohn, Dover, Del.

Sept. 16-17—TEMISKAMING FIREMEN'S ASSOCIATION. Annual Convention, New Liskeard, Ont. Secretary, F. E. Thompson, New Liskeard, Ont.

Sept. 17-18—IOWA FIREMEN'S ASSOCIATION. Meeting at Emmetsburg, Ia. Secretary, Paul A. Soener, Independence, Ia.

Sept. 17-19—INDIANA FIRE DEPARTMENT INSPECTORS' SCHOOL. The School to be held at the Indiana State Fairgrounds, Indianapolis, Ind. State Fire Marshal, Clem Smith, State House, Indianapolis, Ind.

Sept. 23-26—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Meeting, San Jose, Cal. Secretary-Treasurer, Harry E. Strasser, 2046 Oregon Ave., Long Beach, Cal.

Sept. 25-26—TENNESSEE FIREMEN'S ASSOCIATION. 10th Annual Convention, Pulaski, Tenn. Secretary, J. J. Martin, Nashville, Tenn.

*Sept. 26-28—INTERNATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS AND MEDICAL DIRECTORS OF CIVIL SERVICE COMMISSIONS. 19th Annual Convention, Statler Hotel, Detroit, Mich. Secretary Dr. Harry M. Archer, Deputy Fire Commissioner, New York City.

Oct.—ARKANSAS STATE FIREMEN'S ASSOCIATION. Meeting at Russellville, Secretary, H. D. Compton, Little Rock, Ark.

Oct. 3-5—ALABAMA STATE FIREMEN'S ASSOCIATION. 5th Annual Convention, Tuscaloosa, Ala. Secretary, G. E. Crossett, Birmingham, Ala.

Oct. 8 — STATE ASSOCIATION OF FIRE CHIEFS OF MAINE. Meeting, York Harbor, Me. Secretary-Treasurer, C. W. Bowker, South Paris, Me.

Oct. 14-16—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting, Hotel Tulsa, Tulsa, Okla. Secretary-Treasurer, J. R. Pence, Stillwater, Okla.

Oct. 14-17 — INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Meeting at Jacksonville, Fla. General Chairman, George Allen, Supt. of Fire Alarms, Jacksonville.

Oct. 15-17—ILLINOIS FIREMEN'S ASSOCIATION. Annual Convention, Murphysboro, Ill. Secretary, R. W. Alsip, Champaign, Ill.

Oct. 15-17—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual Meeting, Omaha, Neb. Secretary, Louis A. Novak, Norfolk, Neb.

Oct. 23—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly Meeting, fire house, Ridgefield, Conn. Secretary, John H. Moehring, Belltown, Conn.

Nov. 20—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly Meeting, fire house, New Canaan, Conn. Secretary, John H. Moehring, Belltown, Conn.

Dec. 18—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly Meeting, fire house, Springdale, Conn. Secretary, John H. Moehring, Belltown, Conn.

*The notices marked with an asterisk are either appearing for the first time or have been changed since the preceding issue.

Former Chief C. L. McCarthy Dies

Charles L. McCarthy, retired Chief of the Worcester Fire Department in which he served for nearly forty-two years, died suddenly at his home at the age of seventy-two.

The Late Chief C. L. McCarthy

Chief McCarthy was born in Boston, Mass., in 1868. He moved to Worcester in 1895 and entered the Fire Department in 1896 as a substitute. In 1903, he was made a permanent fireman. After that, his promotions came in rapid succession. He was made Chief in 1922. In 1938, he was retired from active service after reaching the age limit of seventy. One of Chief McCarthy's strongest beliefs was in 365 Fire Prevention days per year.

Speeding Apparatus Causes Fatalities

The recent tragic death of three firemen, members of an Ohio rural volunteer department, the serious injury of five other members of the company, the complete destruction of their new $7,000 fire truck, and the loss of the property they were intent upon saving, again demonstrates the utter futility of operating apparatus at speeds greatly in excess of those recognized as safe.

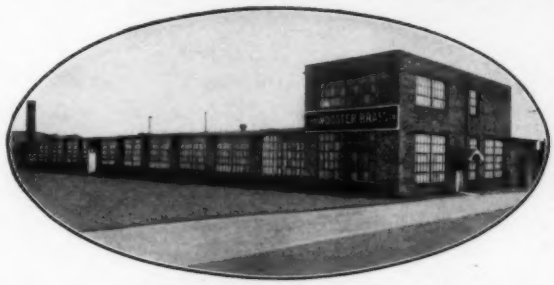
This incident occurred when the truck, reported to have been traveling at eighty miles per hour, failed to negotiate a curve and crashed into a ditch. The department's objective was a burning barn located not to exceed a distance of about five miles from the fire station, which could have been reached within possibly seven minutes traveling time at a speed of not over 45 miles per hour. An attempt, therefore, to save about three minutes, spelled the difference between safety and almost complete disaster.

The above incident recalls practically a parallel occurrence of some eight years ago in another Ohio rural department, which resulted in the death of five men, the serious injury of four others, and the demolition of their new equipment.

The brief recital of these tragedies may be the means of causing others to pause and think.

H. J. MANNING

Announcing **A NEW COMPANY**



Our plant is most modern in every detail and provides approximately 17,000 sq. ft. of floor space.

TO MAKE AND DISTRIBUTE

HOSE BRASS GOODS

A company new in name but rich with years of experience in the fire field. Mr. John C. Schellin was one of the founders of a leading manufacturer in this line and with him, as President of this new company, is a personnel of thoroughly trained and experienced men.

We are in production and ready to fill orders for WOOSTER-DAY FIRE-MIST nozzles, WOOSTER BALL SHUTOFF nozzles and our BALL LUG hose coupling.

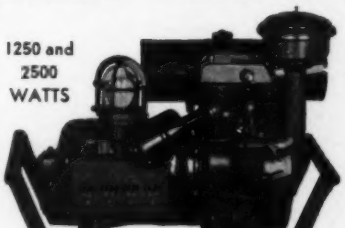
Send for literature and quotations.

THE WOOSTER BRASS CO.

WOOSTER, OHIO

"U.S." PORTABLE LIGHT PLANTS

1250 and 2500 WATTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

LARGER SIZES AVAILABLE

Write for Catalog.

UNITED STATES MOTORS CORP.
430 Nebraska Street, Oshkosh, Wis.

JANESVILLE QUALITY FIRE COATS

There's a reason why so many firemen have changed to JANESVILLE QUALITY. Write us about our OPEN ACCOUNT offer to members of paid and volunteer fire departments.

RUBBER AND DUCK COATS AND BUNKERS

We also manufacture the New White Striped Safety Coats

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JANESVILLE, WIS.

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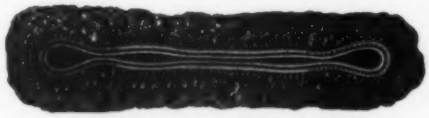
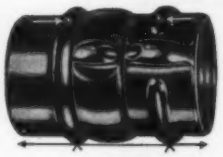
Air-Cooled or Water-Cooled
Powered Apparatus

HAHN MOTORS, INC. HAMBURG, PA.



This is the new LIGHT WEIGHT
BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive Chicago, Illinois

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FIRE HOSE

A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose

Manufactured by
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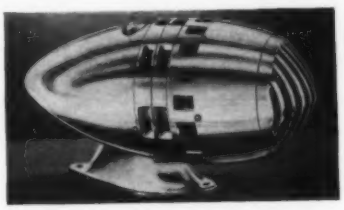
BUFFALO, N. Y.
"Territories Available"

COMBINATION SIREN AND LIGHT



A Roar—A Flashing Light with the touch of a button. Specify H.O.R. products on your new apparatus.

H.O.R. CO., Inc., 10 Broad St.
Stapleton, S. I., N. Y.

6 NEW **AUTOMATICS** *6 NEW*

SPECIAL SAFETY features for fire fighters

L-O-O-K
Select Your Own Local Distributor

DISTRIBUTORS . . .
Write for our 16-page catalogue and the liberal . . .

Y-BURN PROFIT PROPOSITION

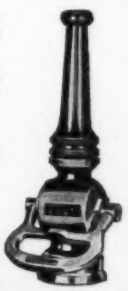
Y-BURN, INC., 564 W. Randolph St., CHICAGO, ILL.

CHIEF! Insist on the COLT when buying Shut-Off Nozzles . . . and get the best

The unquestioned durability of the COLT has for twenty-five years been the subject of discussion among fire fighters.

When efficiency is demanded, the COLT has been found to be the easiest to operate, and will stand the severest test of strength and use better and longer than any other nozzle.

Furnished in three sizes—¾" and 1" for chemical hose, 1½" for leaderline work, 2½" for playpipes. Plain or rubber bumper tips furnished. All shut-off nozzles guaranteed for 5 years.



Write for catalog and name of dealer nearest you or see your regular supplier.

EXCELSIOR BRASS MFG. CO.
217-219 W. Illinois Street, Chicago, Illinois
Manufacturers of Fire Hose Nozzles for 25 Years

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.

Valuable Information

All the manufacturers you will find represented in our advertising pages have interesting and valuable data about their equipment which is yours for the asking. When writing be sure to mention FIRE ENGINEERING.

Chief Swanson Retires

Chief Charles E. Swanson, Everett, Wash., Fire Department, retired after thirty-five years of service, on July 1. C. A. Blunt has now assumed the duties of Chief of the department.

Chief C. A. Blunt, Present Chief of the Everett Fire Department, Is Congratulating Ex-Chief Swanson

J. D. Williams, Commissioner of Safety of Everett, Wash., is in the middle. The car that was presented Chief Swanson is at the left.

The Eighteen-foot Boat Presented to Chief Swanson on His Retirement by the Members of the Fire Department, and the Outboard Motor Presented Him by the Chiefs of Washington

Chief Swanson's rise in the department was rapid. In 1907 he was named Lieutenant, in 1908 Captain, and on January, 1910, Assistant Chief. He became Chief after the death of Chief Taro in 1923.

Chief Charles Blunt, who has just been made Chief, joined the department in 1916, but obtained a leave of absence to serve in the war. In 1919, he returned to the department following his discharge from the army, and just six months later he was named Lieutenant.

About 300 friends, residents of the city, department leaders and men from the entire Northwest, and others closely associated with Chief Swanson, gathered at an appreciation banquet to pay tribute to him. Besides the tribute that was paid him verbally, he was presented with a big sedan, a purse of silver, a boat, an outboard motor to propel the boat, and a framed scroll signed by the members of the Fire Department.

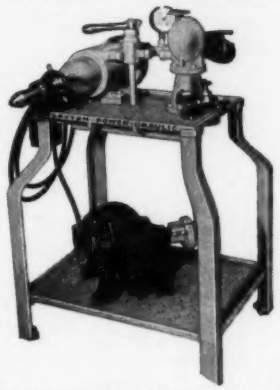
Self-Inspection Blanks To Be Distributed

The Nassau County Fire Commission, Mineola, N. Y., has mailed a suggested form of self-inspection blank for mercantile establishments to all Chiefs in Nassau County. These blanks are to be distributed to each store, factory, warehouse, and other mercantile establishments, to be filled in.

DAYTON

Power-draulic

EXPANDER ● HOSE TESTER
EXPANSION RING EXTRACTOR



Motor-driven with ¾ h.p. gear head motor

FOR THE PROPER CARE OF HOSE

No hammer and chisel necessary in removing old rings from couplings. Couplings from ¾" to 6" suction size expanded and hose tested automatically up to 700 lbs. pressure — no manual effort needed. Send for illustrated bulletin.

DAYTON FIRE EQUIPMENT CO.
1242-48 W. 2nd ST., DAYTON, OHIO

Cut Fire Losses with

MASTER-LIGHTS!

Type WS

Now, let your men work **effectively** in those vital first 5 minutes at the fire. Equip them with MASTER-LIGHTS! They'll **work faster—be more efficient—cut fire losses.** For MASTER-LIGHTS let your men **SEE**—even in blinding smoke! Their **HIGH** POWER and CONVENIENCE help your men find fires while they're still controllable.

The WS Will Help You!

MASTER-LIGHT WS is one of the MASTER-LIGHTS you need. Perfect balance—weighs only 12 pounds, complete with rechargeable battery—250,000 c.p. beam with **full mile range!** Powerful, convenient WS helps your men **work faster.** And they're **safer** with the WS to point out danger spots to them!

Try MASTER-LIGHTS *Free!*

The WS is only one of many MASTER-LIGHTS that will help you. Write now for Folder. Select lights you want, then send for your MASTER-LIGHTS on 30 days FREE TRIAL! Prove MASTER-LIGHTS' value at our expense—write NOW!

CARPENTER MFG. CO.
200 Sidney Street, Cambridge, Mass.

FALSE ALARMS

"I don't care if you do freckle easily. You have got to get rid of that umbrella!"

UH-HUH

Smokey's little son Willie had just reached the age when he would be admitted to school. When Willie returned from his first day of school, his father asked him, "What did you learn at school today?"

"I learned to say 'Yes, sir' and 'No, sir' and 'No, ma'am' and 'Yes, ma'am.'"

"You did?"

"Yeah."

One noted educator divides American colleges into two groups, those who wish they had fired the football coach last fall, and those who wish they hadn't.

PREFERS AN EARTHQUAKE

There had been several earthquake shocks in the neighborhood, so the local fire Chief and his wife sent their little boy to an uncle who lived at some distance.

A few days later, the parents received this telegram: "Am returning your boy. Send earthquake."

At a Long Island resort, a girl landed a fish weighing 120 pounds. It was five feet six inches tall, wore plus four knickers and has already spoken to her father.

HIS CLAIM TO FAME

A western Chief was traveling with an English Chief to one of the I.A.F.C. Conventions and for more than an hour had been boasting to the English Chief about the magnificence of the Rocky Mountains.

"You seem very proud of them," observed his companion.

"You bet I am," replied the western Chief. "And I ought to be, since my ancestors built them."

The other thought this over for a few moments, and then asked, "Did you ever hear of the Dead Sea?"

"Yes, indeed," replied the man from the west. "I know all about the Dead Sea."

"Well did you know that my great grandfather killed the thing."

In the old days, when a fellow told a girl a naughty story, she blushed at it. Nowadays, she memorizes it.

IT SOUNDS CONVINCING

One night in one of the western departments, steak was being served for dinner. One of the boys sent his steak out to the kitchen to have it cooked again. He was promptly told that the steak had been cooked enough.

"Cooked, hell!" he growled, "I've seen a cow hurt worse than that get up and walk again."

A politician is one who stands for what he thinks the voters will fall for.

AN ALL NIGHT JOB

Pete, the tillerman, was a victim of insommia. Every night he had a dickens of a time getting to sleep.

"If you can't sleep, count sheep," advised his brother fire fighters.

"I did last night," said Pete, "I counted 10,000 sheep and put them in cars and sent 'em to market. By the time I'd figured up my losses, it was time to get up."

You would not knock the jokes we use could you but see those we refuse.

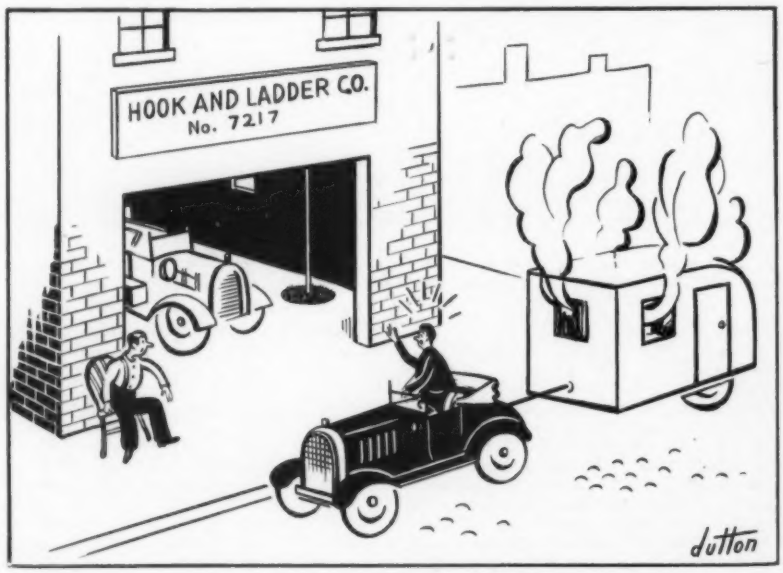
HE NEEDED THE EXERCISE

Old Doc Crutch was making a final examination of one of the boys at Station 3 who had just returned to service after a long period of confinement.

"Well, Doc," said the patient, "you sure kept your promise when you said you'd have me walking around in a month."

"Well, well, that's fine."

"Yes, I had to sell my car when I got your bill."



"I would like to report a fire!"

AMERICAN-MARSH PUMPS

World's largest pump manufacturers building fire pumps Pumps--and pumps only--since 1873

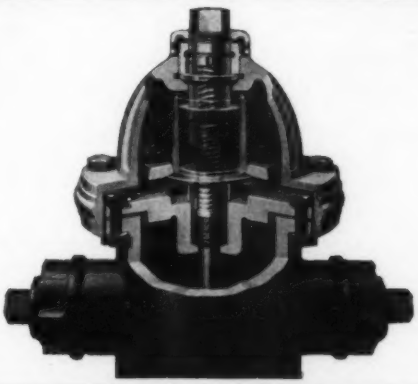
Dear Mr. Fire Chief:
Selecting a new fire pump is a tough job. You are held responsible for your recommendation, and there are many reliable fire pumps on the market today. You cannot go wrong, however, if you suggest buying one of our Barton-American **Front Mounted or Midship Mounted** Pumps - because we not only sell an up-to-date fire pump, but give you

HIGHER PRESSURES AT LOWER ENGINE SPEED

the advantage of which you will readily appreciate.

We shall be glad to give you any desired information.
Write us for bulletins and specifications covering our complete line.

Thank you for your attention. Yours very truly,
AMERICAN-MARSH PUMPS, INC., Battle Creek, Michigan



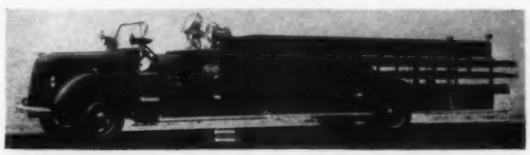
MUELLER-COLUMBIAN FIRE HYDRANTS

The SELF OILING feature of these hydrants is a favorite with Fire Chiefs. They like it because they know the threads cannot rust, it cannot freeze, and the operating nut will always turn easily. There's no time lost hooking up to a Mueller-Columbian.

WRITE FOR FULL INFORMATION

Mueller Co. Chattanooga, Tenn.

A SEALAND PUMPER FOR GREENLAWN, N. Y.



It has a 500 gal. two-stage centrifugal pump, 150 gal. booster tank, 190 feet of ladders, 235-in. wheel base chassis—hose and accessories carried in body.

THE SEALAND CORPORATION
Modern Fire Apparatus *Fire Alarm Systems*
Bridgeport, Conn.

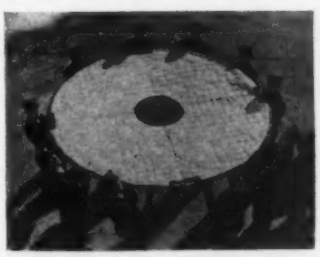
MANHATTAN FIRE HOSE

★ **Carefully Inspected at Every Stage of Manufacture**
★ **Every Length Tested Under Pressure**
★ **Flat-Folding . . . . . Easy-to-Handle**

Made by the makers of Manhattan Radio-Active Treated Fire Hose—the mildew-proof, rot-proof, freeze-proof fire hose.

THE MANHATTAN RUBBER MFG. DIVISION
of RAYBESTOS-MANHATTAN, Inc.
Executive Offices and Factories Passaic, New Jersey

Every Fire Truck Should Carry a Life Net



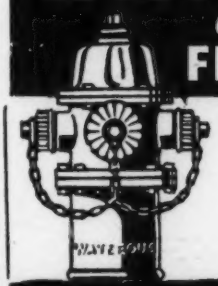
"1940 Quarterfold ATLAS"

Specify the Atlas Life Net

Both Aerials and Pumpers come equipped with compartments to carry Life Nets. . . . Specify ATLAS.

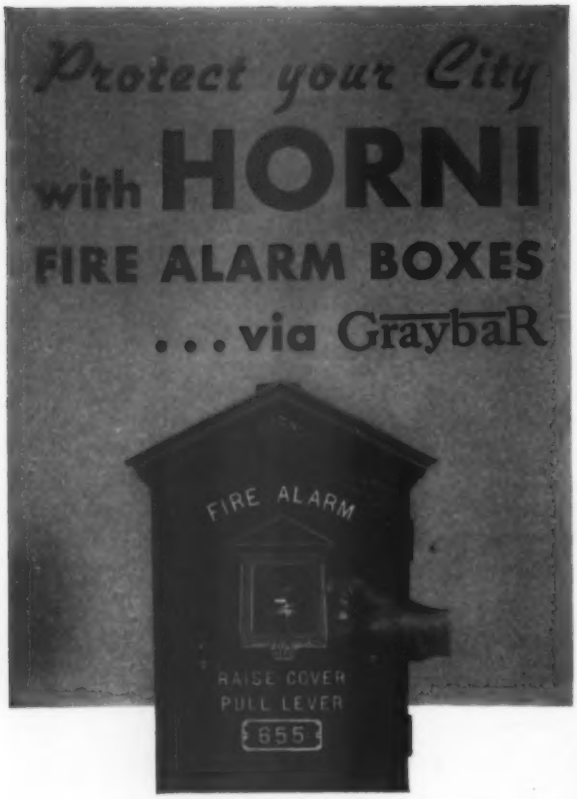
ATLAS FIRE EQUIPMENT CO., Inc.
26 Warren Street - - New York, N. Y.

WATEROUS COMPRESSION FIRE HYDRANTS



Waterous Dependable
ESTABLISHED 1886

WATEROUS COMPANY - ST. PAUL



Protect yourself

BY ORDERING TODAY

By ordering a "safety supply" of HORNI Fire Alarm Boxes today, you get double-protection. Right now, GRAYBAR can offer *immediate delivery* . . . thus you can protect yourself from delay or difficulty later on arising from any possible upsetting influence of "national-defense" demands.

What's more, you'll be giving your city or town the proved protection of equipment with security features found in no other box. Positively non-interfering, both the Standard and Compositrol types have been designed with a simplicity which reduces maintenance costs as well as assuring trustworthy operation.

There's extra protection, too, in going to GRAYBAR for boxes —and for all other signaling and alarm equipment. A staff of experienced specialists is immediately "on call" to help you in planning new systems or modernizing present ones.

Write today for specifications and prices on boxes or other supplies, or for prompt aid on any fire-alarm problem. Graybar Electric Company, Graybar Building, New York.

OFFICES IN 83 PRINCIPAL CITIES

GraybaR QUALITY Since 1869 — Distributed by GraybaR ELECTRIC COMPANY

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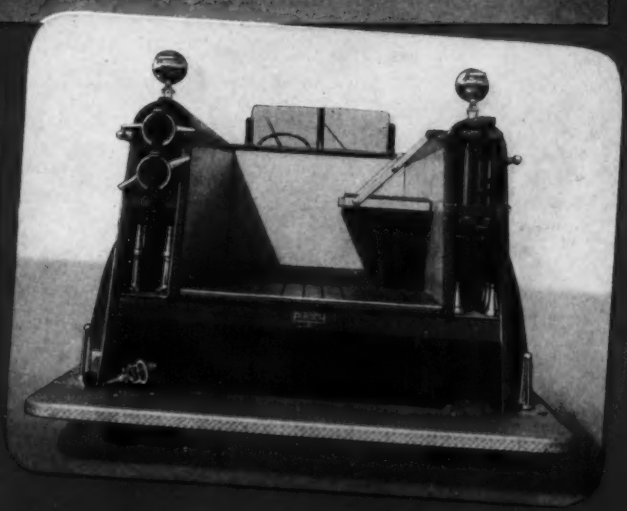
Rio de Janeiro, Brazil, S. A.

2 PIRSCH PUMPERS

Rio de Janeiro, the Capital of Brazil, has placed in service these two new streamlined Pirsch Triple Combination Pumping Engines.



PETER PIRSCH & SONS CO., KENOSHA, WIS.

A COMPLETE LINE

OF EUREKA *Streamlined* FIRE HOSE

The only complete line offering you Multiple-Woven, Double-Jacket, and Single-Jacket types of construction in various grades and prices. Each construction is available with such exclusive EUREKA developments as:

STREAMLINED—accomplished by the Smooth-Interior Filler-Ply . . . making the inner surface smooth and level . . . eliminating "washboarding" . . . assuring maximum pressure at the nozzle.

BOMB-TESTED RUBBER LINING—4 plies of heat-resisting long-lived rubber. Through the oxygen bomb-test, the superior aging characteristics of this EUREKA rubber lining have been proved.

MILDEW-PROOF FABRICS—the Fabrics used are antiseptically treated to prevent the formation of mildew and rot.

EUREKA also offers a complete line of genuine Wax and Gum Treated single- and double-jacket Fire Hose.

For Greater Protection to Lives and Property . . . SPECIFY

EUREKA FIRE HOSE

DIVISION OF UNITED STATES RUBBER COMPANY

1230 Sixth Avenue • Rockefeller Center • New York, N. Y.